SUBSTANCE MISUSE IN THE UNDERGRADUATE MEDICAL CURRICULUM: A TOOLKIT FOR TEACHING AND LEARNING

INTERNATIONAL CENTRE FOR DRUG POLICY
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Preface

The misuse of alcohol, tobacco and both licit and illicit drugs in the UK is one of the greatest health challenges today. It impacts not just on the health but also the wider lives of those using these substances, their families, their colleagues and wider society. It lies behind a high proportion of all crime, and it costs the country billions of pounds each year in prevention and treatment programmes, crime and other economic costs.

Part of the government's response to this problem is to address the education of professionals who will deal with substance misuse. During 2005-2007 a national project, involving experts from all the key national organisations and all UK medical schools undertook a review of the ways in which substance misuse was taught. The outcome of this was UK Corporate Guidance on Substance Misuse in the Undergraduate Curriculum.

Those who misuse substances will inevitably at some stage be seen by doctors who therefore have a vital role to play in recognising substance misuse, and in assessing and managing the problems associated with this. This applies equally to hospital doctors and general practitioners, as much as to hospital and community specialists in addiction; because all these staff will encounter users every day. The generalist doctors are often the only medical staff a patient sees and so they may have a unique opportunity to intervene and, if needed, to refer for more specialist help. This is why the first core aim for this curriculum for undergraduate medical students is to ensure that by the time they graduate all doctors have the core skills and knowledge to handle substance misuse when they meet it.

It is important to acknowledge that the use of substances by medical students is at worrying levels, and this can impact on both their personal health and their professional practice. Students' awareness of the risks and consequences of their own, and hence also their colleagues', use of substances needs to be raised, and this therefore is the second core aim for this curriculum.

The third aim of the curriculum seeks to address the issue of attitudes to those who are addicted/dependent both in society generally and in the medical profession itself. The stigmatisation of addiction and the marginalisation of those who are affected create barriers to prevention and treatment. The medical curriculum must challenge stigma and discrimination, producing doctors who view the problems objectively and compassionately.

Substance misuse can be found in nearly all areas of medicine, which means that the opportunities to learn about it are extensive. However, this also means that the topic risks being fragmented, uncoordinated, spread too thinly, and it is often ultimately therefore barely visible to students. This risk has to be tackled through a review of the curriculum to ensure that core learning outcomes are identified and co-ordinated.

This project has focused on the undergraduate phase of basic medical education, but it is of equal importance that learning about substance misuse is developed in the Foundation years and subsequent training. Medical schools also have to address the issue at the very beginning of medical careers.

This toolkit developed, to accompany the corporate guidance and curriculum, provides resources for medical schools on the effective development and implementation of high quality substance misuse training within the undergraduate curriculum. It sets out core aims and learning outcomes for undergraduate medical curricula, and good practice on delivering and organising this part of the curriculum.

The emphasis is placed on the integration of substance misuse learning/teaching within the existing teaching programme of medical schools: curriculum harmonisation, contributing to existing teaching, sharing resources and reaching appropriate recognition, by securing substance misuse place in formal assessment and audit procedures. Direction on how to approach curriculum review and change, including the challenges that are likely to arise and how these may be handled are addressed. The toolkit, as a flexible and adaptable resource, continues to be useful within the changing health commissioning environment.

I hope that the list of core learning outcomes and the guidance on delivery in this toolkit will help medical schools to achieve the three central aims, so that we can ensure that our graduates play their part in tackling substance misuse. The very active involvement of UK medical schools in developing this guidance and toolkit reassures me that this is a realistic hope.

Professor Hamid Ghodse; Director, International Centre for Drug Policy

SECTION 1: Introduction and background to the project

The knowledge and skill necessary to recognize and effectively manage individuals with substance misuse problems presenting to health services, is not consistently addressed by undergraduate medical school curricula throughout the world. This toolkit aims to provide guidance to medical schools on the effective implementation and/or development of high quality substance misuse training within the undergraduate curriculum.

1.1 Alcohol, Drugs and Tobacco and the Impact on Public Health

The use of legal and illegal drugs, including alcohol and tobacco, by various cultures within different societies, makes this an issue of cross-border and global concern. Between 149 and 272 million people (3.3% to 6.1% of the overall population aged 15-64) are estimated to use illicit substances worldwide with cannabis being the most widely used drug. A growing problem is the non–medical use of prescription drugs and more recently, new synthetic compounds have emerged in illicit drug markets. These substances are known as 'legal highs' and are substitutes for illicit stimulant drugs such as cocaine and ecstasy. [(1)]

Tobacco is used by about 14% of the world's population (an estimated 1 billion adults) [(2)] whereas, 2 billion people worldwide are estimated to use alcohol with 76.3 million having a diagnosis of alcohol use disorder. [(3, 7)]

In the United Kingdom, estimates show that approximately 81,700 adults aged 35 and over in England die annually through smoking. [(4)] Costs for the NHS for alcohol misuse are estimated by the Department of Health at £2.7 billion per year. [(5)] About 3 million people in the UK use illicit drugs and 320,000 are classed as problem drug users. [(6)]

The global threat of this prevalent use on public health and society in general is enormous and of major concern. [(7)] Tobacco is believed to be responsible for 6 million deaths per year globally, killing one person every 6 seconds; it acts as a risk factor in six out of the eight leading causes of death worldwide; and, is responsible for 4.1% of disability-adjusted life years. [(2, 7, 8, 9)] In the UK, smoking costs the NHS alone £2.7 billion each year for treating diseases caused by smoking. [(10)]

The impacts of alcohol misuse, whether direct or contributory, acute or chronic, are alarming, making problematic use of alcohol a major pressure on society. Worldwide, the harmful use of alcohol is believed to be responsible for 2.5 million deaths each year. Alcohol consumption is the world's third largest risk factor for disease and disability and is a causal factor in 60 types of diseases and injuries and a component cause in 200 others.[(11)] In England, the overall costs to society are estimated at £25.1 billion per year, with health service costs around £2.7 billion per year. [(12)]

The global estimate for problem drug users aged 15-64 is between 15 and 39 million with deaths related to or linked to illicit drug use being between 104,000 and 263, 000. [(1,7)] Illicit

drug use contributes significantly to the global burden of disease with those most at risk being injecting drug users with their increased morbidity and mortality from HIV, hepatitis, overdose, and suicide. UK data indicate that there are 320,000 problem drug users. Class A drug use (typically opioids and cocaine) generates an estimated £15.4 billion in crime and health costs each year, of which 99% is accounted for by problem drug users. [6]

1.2 Substance Misuse in the Curriculum and Global Health Improvement

Epidemiological studies on general health morbidity and mortality implicate drug, alcohol and tobacco misuse either directly or indirectly. This applies to all age groups and to the various diverse groups of society. However, studies show that such behaviours and associated ill health tend to be more prevalent among those living in areas more socially deprived, those either unemployed, never worked or in routine occupations. This cohort of society is also less likely to seek help from health care providers resulting in social inequalities. In the UK, public health directives include reducing social inequalities and improving health overall.

Doctors within all fields of medicine are very likely to come into contact with individuals with substance related health problems. The medical profession is instrumental in reducing social inequalities and improving global health. Hence having integrated and effective training in substance misuse during the undergraduate years as well as part of continuing professional development, is important in providing the adequate knowledge, skills and confidence in recognizing and dealing with substance related health problems.

Early recognition and effective treatment can have significant impact on the economic burden of substance related health problems. The introduction of the ban on smoking in enclosed public places resulted in a reduction in cardiac problems with significant reduction in health care costs.

1.3 Substance Misuse in the Curriculum and the World Health Organisation

The WHO recognises the importance of adequate training in mental health and substance misuse and its impact on reducing stigma, facilitating social inclusion and provision of adequate treatment options. A recent report involving the European Region identified that 83% and 79% of European countries provided opportunities for psychiatrists undergoing specialist training in drug addiction and alcohol addiction respectively [13]. It highlighted that although all countries took the training of psychiatrists seriously, there were striking differences in opportunities for training, resulting in variations in competences. The document promoted standardisation of competences. Variations are even more striking when considering other world regions and doctors from other fields of medicine and undergraduate medical students.

The joint initiatives of St. George's, University of London, and the WHO on the education of healthcare professionals related to drugs, alcohol, and tobacco and related prevention activities, recommended that governments should drive the inclusion and implementation of substance misuse within the curricula for medical doctors, nurses, and pharmacists.
Three international expert groups on medical, pharmacy and nursing education were convened to develop an international guideline for education on substance misuse by the Centre for Addiction Studies at St George's, University of London on behalf of the WHO. [14]

1.4 The Role of Doctors

Doctors play an important role in the development and delivery of policy and services for the treatment of individuals with substance misuse problems. Doctors, especially those in senior roles, also provide clinical leadership, influencing the attitudes of health care professionals towards individuals with substance misuse problems, with a significant impact on the patient experience and patient journey. Hence, the education and training of health professionals in these areas is considered to be vital for the future health of the nation given their role in treating and preventing health problems arising from substance misuse.

In the UK, it is estimated that General Practitioners (GP) come across over 350 heavy drinkers each year among their patients [(15)]. Hospital doctors will see the impact of alcohol misuse in virtually every department. Alcohol is responsible for around 25% of all hospital admissions in the UK [(16)] and around 35% of Accident and Emergency Department attendances [(17)], increasing to 70% during peak times and weekends [(18)]. In England and Wales, there are more than 250,000 problem drug users. One in every 12 GP registered patients report using illicit drugs at some time within the previous year [(19)]. Over a third of a typical GP's patients will be smokers, and most of those will know about the risks of cancer and heart disease and want to cut down or give up [(20)].

A gradual change in the society's attitude towards smoking ('de-glamorising') has been observed over last 30 years. This depended heavily on leadership and direction from doctors [(21)] [(22-0)]. Further clinical leadership will be necessary for the future change of society's attitudes towards drinking and towards substance misuse in general.

Doctors are more than three times more likely to die from cirrhosis than the population as a whole, with the only higher-risk occupational group being publicans and bar staff [(23)]. Ease of access to medication, to prescriptions, work-related professional pressures, a culture of drinking within medical schools, and other factors, contribute to the medical profession being a high risk vulnerable group. A study in one school found over half of second year students regularly drank to excess, with one-third using drugs [(24)]. While tobacco use among doctors is low, perhaps because of widespread appreciation of the medical impact, this has not been the case for alcohol. With alcohol, the health message is less simple, and is complicated by alcohol generally perceived as 'food' purchased from a supermarket or other food retailers [(25)]. Apart from the impact on their own health, medical students need to be aware of the serious potential consequences of misusing drugs and alcohol, on their career [(26)]. A large number of doctors reported to their medical councils tend to be related to situations involving use of substances. Within the UK, the General Medical Council's disciplinary procedures over the three-month period in summer 2010, involved twelve cases resulting in impairment through alcohol and drug misuse [(27)]. The UK General Medical Council records indicate that 199 out of 201 doctors under supervision at the end of 2001 had problems with alcohol, drugs or mental ill health [(28)]. Similarly, the NHS Practitioner Health Programme report on its work in London between October 2008 – September 2010 shows that of the 405 practitioner patients 134 had addiction diagnoses [(29)].

Although hard to quantify, the issue of rational and appropriate prescribing is high on the list of priorities of the medical establishment, and a core outcome for medical graduates in Tomorrow's Doctors [(30)]. Iatrogenic addiction, i.e. drug abuse caused through inappropriate prescribing, is another issue directly linked to the role of doctors [(31)]. A survey undertaken by the Family Doctors Association suggests that nearly 80% of GPs routinely prescribe drugs to which they believe the patient may be addicted such as sleeping pills, antidepressants and painkillers [(32)].

Such data highlight the importance of ensuring adequate training of all future doctors in the field of addiction and continued medical education for doctors from all fields of medicine.

Substance misuse is not just a specialised area of practice concerned with treating addicts or an abstract issue of public health; it is one of the worst health problems doctors encounter many times a day.

1.5 Substance Misuse in the Undergraduate Curriculum: the UK National Picture

The UK national picture of medical education in substance misuse has been unclear for a number of years. Surveys of UK curricula between the late 1980s and 2003 found that substance misuse within the curriculum programme was generally very poorly represented, and curriculum hours dedicated to substance misuse teaching were unsatisfactory and declining. Substance misuse was gradually marginalized within the curriculum, with increased reliance on the usual disciplines of psychiatry and pharmacology and perhaps primary care, reinforcing the false notion that substance misuse is a niche specialty topic [(33)].

As part of this project a survey of UK medical schools was undertaken. The aim of the survey was to gather information about substance misuse teaching and learning, including schools' strategies for embedding the topic in the curriculum, and to collect examples of good quality learning materials. The survey findings highlighted major inconsistencies in the approach to substance misuse teaching within the undergraduate curricula of UK Medical Schools.

1.6 Overview of the Project

'Substance Misuse in the Undergraduate Medical Curriculum' is a project driven by the International Centre for Drug Policy (ICDP) with the aims of:

- Supporting the effective implementation of the guidance on the delivery of high quality substance misuse training within undergraduate medical education.
- Implementing a consensus approach to substance misuse training across all medical schools.
- Implementing an effective model for enhancing substance misuse education for a range of professionals in training.

Substance misuse is a specialised discipline concerned with treating addicts but is also an area of practice that recognizes the huge impact of use of substances on public health through consequent or associated poor health outcomes. Doctors working within the various sectors of medicine are likely to be exposed to patient presentations linked with use of substances.

This national project, undertaken by the ICDP, is led by a national Steering Committee including representatives from the Medical Schools Council, the Department of Health, the Home Office and the General Medical Council, and the British Medical Association.

Phase One 2005-2007: Review of Substance Misuse Teaching
During this first phase the project reviewed the ways in which substance misuse problems were then taught in all UK medical schools. It sought to establish the reasons for its identified ineffectiveness and to make recommendations for its improvement in medical schools throughout the country. The project aimed to: understand the reasons why medical education is not preparing doctors properly in this respect; specify initiatives that different medical schools could take to improve matters; and make recommendations for further action.

The outcome of phase one of the project was the production of a UK corporate guidance document, 'Substance Misuse in the Undergraduate Medical Curriculum' [34] and a toolkit for teaching and learning which sets out core aims and learning outcomes for undergraduate curricula and good practice on delivery.

Implementation Phase 2008-2011
Following the publication of the corporate guidance document 'Substance Misuse in the Undergraduate Medical Curriculum' a proposal for an implementation phase in English medical schools was developed in 2008 and submitted to the Department of Health (England), who subsequently agreed to fund it for a three year period.

1.7 Aim of the Toolkit

The aim of the toolkit is to provide guidance to medical schools on the effective implementation and/or development of high quality substance misuse training within the undergraduate curriculum. The toolkit provides guidance and resources to support and facilitate the mapping, development and implementation and management of change processes.

The emphasis is placed on the integration of substance misuse teaching with existing practice of a medical school including: curriculum harmonisation, contributing to existing teaching, sharing resources and reaching appropriate recognition by securing substance misuse place in formal assessment and audit procedures. Direction on how to approach curriculum review and change, including the challenges that are likely to arise and how these may be handled, are addressed.

1.8 Who is the Toolkit for?

The intention is that this toolkit will be a resource for those involved in curriculum development and implementation. The intended audience includes Deans of medical schools, institutional committee members, teaching leads and staff, curriculum developers and co-ordinators.

1.9 How to use the Toolkit

The toolkit is intended as a flexible resource that can be used in a number of ways. Its main function is to provide expert guidance on the mapping, development and implementation of substance misuse teaching/training within the undergraduate curriculum. Therefore, the intention has been to provide information in a logical and useful order, beginning with contextual information about the place of substance misuse in the undergraduate curricula, then moving on to the Corporate Curriculum base and sections setting out how to review and integrate substance misuse education within a medical school. A detailed Mapping Matrix is provided that enables one to conduct a full inventory of existing teaching activities and resources against the learning outcomes identified in the Corporate Curriculum. This will provide data that can be used for planning changes within substance misuse teaching. The appendices provide additional proforma to help with mapping, and more resources on curriculum pedagogy.

1.10 Overview of Toolkit Content

From this introduction, the toolkit moves on in *Section 2* to give further background to the Substance Misuse in the Undergraduate Project and the rationale for substance misuse as a cross-curricula subject, with the core curriculum and learning outcomes as aligned to Tomorrow's Doctors.

Section 3 is aimed at curriculum developers and co-ordinators. It gives an overview of curriculum and its development followed by guidance on an integrated curriculum and its benefits. The process and steps of integrating substance misuse into an existing medical school curriculum are discussed.

Section 4 covers reviewing and mapping substance misuse education and the planning for and implementation of changes to the curriculum followed by guidance on managing change within the curriculum. Attention is drawn to identifying potential allies and expanding common interest areas.

Section 5 comprises appendices that include the mapping matrix, proforma for designing assessments and a curriculum course and fact sheets

The toolkit concludes with references, further reading, recommended addiction teaching information resources and a glossary of terms.

This revised edition of the toolkit includes changes recommended during the implementation phase of the project.

SECTION 2: Substance Misuse: A Cross-Curricula Subject

2.1 Background and Rationale

Substance misuse is common. It is a behaviour which has no age, gender, and status, ethnic or cultural boundaries. The impact of the physical, psychological and social morbidity, either directly or indirectly associated with such behaviour, is global. It is an expectation and not a surprise that doctors in all fields of medicine are approached about substance-related health problems. The recognition and effective management of substance-related problems by doctors, whether specialists or generalists, are of utmost importance, making the challenge for medical education in this area a priority.

Studies have indicated that doctors, in their practice, often miss evidence of substance misuse in their patients, either lacking skills to detect and assess, or having insufficient knowledge about how to intervene or to refer for specialist help. At times this is complicated with attitude problems, with doctors either stigmatising the user or minimising the problem.

Another issue of particular concern is the misuse of substances among doctors and medical students. Doctors were shown to be more than three times more likely to die from cirrhosis than the population as a whole [(23)]. A drinking culture is common at medical school. A study in one school found over half of second-year students regularly drank to excess, with one-third using drugs [(24)].

Surveys of UK curricula showed that substance misuse teaching was generally scarce and largely ineffective in reaching the goal of competence in delivering a good standard of care for substance-related health problems.

In some countries, such as North America, a number of initiatives have been developed - establishing a core curriculum and developing teaching and learning innovations. The lessons from these initiatives are clear: substance misuse must be integrated into the curriculum throughout its length and breadth. It needs to be introduced from the beginning of the course. The aim of this project is to facilitate such integration within UK medical schools.

2.2 Report on Survey of UK Medical Schools and Recommendations

The survey carried out by ICDP provided an overview of the state of substance misuse education in all UK medical schools. The aim of the survey was to gather information about Substance Misuse teaching and learning, including schools' strategies for embedding the topic in the curriculum, and to collect examples of good quality learning materials. The telephone/email survey asked heads of curriculum some general questions. For the purpose of this project the survey aimed to give a broad picture, not attempting detailed measurement. Responses were obtained from every UK medical school.

The survey findings included the following:

There is no commonality of approach in what is taught about substance misuse: learning outcomes differed hugely in style, level of detail, and emphasis.

Many schools covered a lot about alcohol, but relatively few covered teachings about drugs – this aspect was many times left to psychiatrists.

Only two schools planned and co-ordinated their substance misuse curriculum as a whole. Mostly, the teaching was concentrated in the specialty niches.

Assessment of substance misuse within curricula was rarely planned. As blueprinting against curriculum outcomes is increasingly introduced, more formal planning is expected.

Student Selected Components (SSCs): About half the schools had some provision of optional learning about substance misuse.

2.3 Substance Misuse in the Curriculum and Doctors' Performance

Increasing the knowledge, skills and awareness of substance misuse problems is likely to be a product of recognising substance misuse within curriculum planning, development and implementation. Having clear core curriculum learning outcomes for substance misuse which parallel the General Medical Council Outcomes in Tomorrow's Doctors, facilitates the effective implementation of medical education on substance misuse. Substance misuse is of major global public health concern. It impinges upon the various medical disciplines due to the varied effects of legal and illegal substances. Doctors' performance can be significantly improved if knowledge and skills are improved through substance misuse curriculum implementation. The confidence of doctors from various disciplines in medicine can be improved resulting in good medical practice and a reduction in the stigma and marginalization frequently associated with use of substances.

Ensuring an effective substance misuse curriculum is also likely to impact on doctors' performance through addressing use of drugs, alcohol and tobacco by the medical profession. Use of substances by doctors is not uncommon – in fact substance misuse is one of the most prevalent health factors affecting doctors' performance. Substance misuse, as well as associated stress and burnout, results in suboptimal patient care. The effects on performance could be both direct – i.e. dependent on the substance misused and nature of misuse – and indirect, such as financial problems, criminal activity, etc.

The following points provide an outline of effective implementation of a substance misuse undergraduate curriculum:

Improve Knowledge Base and Confidence
Early introduction of teaching in the curriculum will increase the knowledge base and confidence by adding additional teaching time and opportunity for repetition at increasing skill levels.

Decrease Stigma and Marginalisation
Normalisation of substance misuse teaching amongst specialties as a way to reduce the stigma by integration.
Involvement of service users, carers, 12-step groups, and others in provision of teaching alongside Trust and Medical School staff.
To enable a more realistic understanding of and a challenge of attitudes, by the opportunity to meet with individuals who have experience of substance misuse, in a learning environment.

Use of Drugs and Alcohol by the Medical Profession
Looking at the impact on one's own behaviour and how that impacts on the ability to effectively treat another for that issue.
Enabling discussion of the cultural differences between medical professionals and how that may influence their view of the patient and the patient's view of them.
Learning about what to do when one has concerns about a fellow colleague and their substance misuse.

2.4 Core Curriculum and Learning Outcomes

The guidance set out below is, with the addition of the outcomes from GMC Tomorrow's Doctors (2009)[30], from phase one of the project and is intended to provide a definition of the aims and core learning outcomes in substance misuse which medical students should achieve during the undergraduate stage of their basic medical education [28][32].

A curriculum for undergraduate teaching in substance misuse is expected to direct the medical profession towards best practice in dealing with substance misuse and related health issues. The project identified three core aims for students' learning:

1. Students should be able to recognise, assess and understand the management of substance misuse and associated health and social problems and contribute to the prevention of addiction. Students should also recognise and assess how patients put themselves at risk by engaging in substance misuse related behaviour and recognise and understand what defence mechanisms come into play serving to avoid acceptance and recognition of risks related to their substance misuse.

Doctors have a vital role to play in recognising substance misuse, and in assessing and managing the problems associated with this. This applies equally to junior hospital doctors and to general practitioners, even more than to specialists in addiction; because all staff will encounter substance misuse related health problems every day. The generalist doctors are often the only medical staff a patient sees and so they may have a unique opportunity to intervene and, if needed, to refer for more specialist help. This is why the first core aim is to ensure that by the time they graduate all doctors have the core skills and knowledge to handle substance misuse when they meet it.

2. Students should be aware of the effects of substance misuse on their own behaviour and health and on their professional practice and conduct.

The use of substances by medical students is at a worrying level, and this can affect both their personal health and their professional practice. Students' awareness of the risks and consequences of their own, and hence also their colleagues', use of substances needs to be raised.

3. Students' education and training should challenge the stigma and discrimination that are often experienced by people with addiction problems.

The third aim of the curriculum is to address the issue of attitudes to those with a substance misuse problem, both in society at large and in the medical profession itself. The stigmatisation of addiction and the marginalisation of those who are affected create barriers to prevention and treatment. The medical curriculum will challenge stigma and discrimination, producing doctors who view all problems objectively and compassionately.

It is acknowledged that one of the difficulties in mapping and tracking the teaching of substance misuse is that topics associated with substance misuse permeate the whole curriculum and are not simply confined to certain clinical specialties or basic science subject disciplines. In order to aid curriculum planning and integration of substance misuse topics into appropriate course areas, the learning outcomes have been grouped under six key areas:

- Bio-psycho-social models of addiction
- Professionalism and self-care
- Clinical assessment of patients
- Treatment interventions
- Epidemiology, public health and society
- Specific disease and specialty topics

Learning outcomes under these six key areas were identified and mapped on to the outcomes prescribed by the General Medical Council (GMC) in Tomorrow's Doctors [30] (paragraphs 4-10), the relevant sections of which are summarised under each of the areas. The section below lists the outcomes from Tomorrow's Doctors 2003 and the equivalent from Tomorrow's Doctors 2009 that apply to medical schools from academic year 2011/12 [30].

Bio-psycho-social models of addiction:

On graduation, students should be able to:

- Define: substance misuse, mechanisms of dependence (both physical and psychological), tolerance, withdrawal and addictive behaviour
- Demonstrate awareness of the range of substances that can be misused, the different types and classes of licit, illicit and over-the-counter substances, and other colloquial names and their effects
- Demonstrate awareness of the psychological, social and biological aspects of dependence, the interactions between such factors in the individual and the different models used to describe addiction
- Describe the mechanisms of tolerance, dependence and withdrawal of different drugs and the involvement of different neurotransmitter systems

Meets GMC outcome:
4b (2003) Know about, understand and be able to apply and integrate the clinical, basic, behavioural and social sciences on which medical practice is based. 1.8 (2009) - The graduate will be able to apply to medical practice biomedical scientific principles, method and knowledge relating to: anatomy, biochemistry, cell biology, genetics, immunology, microbiology, molecular biology, nutrition, pathology, pharmacology and physiology.

Professionalism, fitness to practise, and students' own health:

On graduation, students should be able to:

- Describe the principles of rational prescribing and the use of psychoactive medication
- Demonstrate professional behaviour towards individuals with problems of addiction which incorporates a non-judgemental compassionate approach and respect for a patient's autonomy
- Describe the ethical and legal issues associated with dealing with cases of substance misuse
- Explain and outline the problems of iatrogenic addiction
- Describe the risk factors for substance misuse in medical students and in health professionals
- Describe how substance misuse problems may affect a health professional's judgement, performance and care of their patients
- Describe the need to balance due concern for the health of a colleague with responsibilities for the safety and welfare of patients
- Outline the role of the medical schools and the GMC in ensuring students' and doctors' fitness to practise

- Describe the sources of help for students and doctors with drug and alcohol related problems

Meets GMC outcomes:
4a (i) (2003) Know and understand our guidance on the principles of good medical practice and the standards of competence, care and conduct expected of doctors in the UK; 3:20(a) (2009) Know about and keep to the GMC's ethical guidance and standards including Good Medical Practice, the 'Duties of a doctor registered with the GMC' and supplementary ethical guidance which describe what is expected of all doctors registered with the GMC.

4d (2003) Recognise personal and professional limits and be willing to ask for help where necessary and recognise the duty to protect patients and others by taking action if a colleague's health, performance or conduct is putting patients at risk; 21(e) (2009) Recognise own personal and professional limits and seek help from colleagues and supervisors where necessary, and 23(j) (2009) Recognise the duty to take actions if a colleague's health, performance or conduct is putting patients at risk.

5c (2003) Be willing to respond constructively to the outcome of appraisal, performance review and assessment; 3.23(f) (2009) Respond constructively to the outcomes of appraisals, performance reviews and assessments.

10 (2003) Graduates must be aware of the health hazards of medical practice, the importance of their own health and the effect that their health has on their ability to practice safely and effectively as a doctor. 3.23(i) (2009) Recognise own personal health needs, consult and follow the advice of a suitably qualified professional, and protect patients from any risk posed by own health.

Clinical Assessment of Patients:

On graduation, students should be able to:

- Describe the major clinical features of alcohol abuse, drug dependence and tobacco use
- Describe the possible outcomes of different treatment regimes for substance misuse and discuss the prognosis and management
- Take a focussed drug and alcohol history
- Elicit signs of misuse of alcohol, tobacco and illicit or over-the-counter (OTC) drugs through physical and mental state examinations and identify and prioritise medical and psychosocial problems associated with substance misuse
- Demonstrate appropriate skills for communicating sensitively with patients about substance misuse issues and know how to deal with challenging, aggressive or intoxicated patients, balancing assessment need with their own safety and that of others
- Appropriately order and interpret urine, blood and other appropriate tests for drugs of addiction, use standardised screening and assessment instruments to detect alcohol and drug levels and describe other special investigations and how to interpret results
- Carry out a psychological assessment of a patient's readiness to implement change

Meets GMC outcomes:
4a (iii) (2003) Know about and understand how errors can happen in practice and the principles of managing risks; 23(d) (2009) Promote monitor and maintain health and safety in the clinical setting, understanding how errors can happen in practice, applying the principles of quality assurance, clinical governance and risk management to medical practice, and understanding responsibilities within the current systems for raising concerns about safety and quality.

4c (2003) Be able to perform clinical and practical skills safely; 2.18 (2009) Carry out practical procedures safely and effectively.

6b (2003) Be able to communicate effectively with individuals and groups; 2.15 (2009) Communicate effectively with patients and colleagues in a medical context.

6c (2003) Understand the principles of audit and the importance of using the results of audit to improve practice.3.21(c) (2009) Continually and systematically reflect on practice and whenever necessary, translate that reflection into action, using improvement techniques and audit appropriately- for example, by critically appraising the prescribing of others.

Treatment Interventions:

On graduation, students should be able to:

- Describe the common treatment regimes for various types of addictions and withdrawal states
- Describe the basis of commonly used therapies for addiction
- Describe the variety of UK agencies to which patients with addiction problems can be referred and how and where to make appropriate referrals for treatment
- Demonstrate awareness of risk related to needle use and disposal for healthcare workers and patients and risk prevention
- Advise a patient appropriately on reducing or abstaining from drinking and smoking and list appropriate agencies or individuals to which patients can be referred to create a treatment plan
- Advise women on the effect of substance use and the impact on foetal and maternal health
- Demonstrate awareness of the need to assess patients' capacity to consent to treatment
- Describe the impact of substance misuse on drug interactions and a patient's compliance with treatment

Meets GMC outcomes:
4b (2003) Know about, understand and be able to apply and integrate the clinical, basic, behavioural and social sciences on which medical practice is based; 1.8 (2009) The graduate will be able to apply to medical practice biomedical scientific principles, method and knowledge relating to: anatomy, biochemistry, cell biology, genetics, immunology, microbiology, molecular biology, nutrition, pathology, pharmacology and physiology.

7a (2003) Know about, understand and respect the roles and expertise of other health and social care professionals. 3.22(a) (2009) Understand and respect the roles and expertise of health and social care professionals in the context of working and learning as a multi-professional team.

Epidemiology, Public Health and Society:

On graduation, students should be able to:

- Outline UK policies on misuse of drugs, drug prescribing and dispensing, and on alcohol and smoking
- Outline UK legislation controlling drugs, alcohol and tobacco, including the legal alcohol limits for driving
- Explain hazardous and harmful levels of alcohol consumption, and the recommended limits for alcohol consumption

- Outline UK strategies for the prevention and treatment of drug misuse
- Outline international policies and strategies to limit drug supply and demand
- Describe the epidemiology of alcohol consumption, smoking, drug misuse in the general population, vulnerable groups and specifically in doctors and other health care professionals
- Describe the problems associated with self-medication
- Demonstrate awareness of the risks in different work environments and the need for employers to have drug and alcohol policies
- Describe the effects of addiction on individuals, their families, friends and colleagues in a range of age-groups; from children and adolescents to older people
- Describe the long-term physical, psychological and social consequences of various types of addiction and substance misuse, including the economic consequences and the links between crime and substance misuse
- Describe the risks to the children of addicted parents including child protection policies and a doctor's duty to implement these

Meets GMC outcomes:
4a (ii) (2003) Know about and understand the environment in which medicine is practised in the UK. 1.11(2009) Apply to medical practice the principles, method and knowledge of population health and the improvement of health and health care.

4a (iii) (2003) Know about and understand how errors can happen in practice and the principles of managing risks. 3.23(d) (2009) Promote, monitor and maintain health and safety in the clinical setting, understanding how errors can happen in practice, applying the principles of quality assurance, clinical governance and risk management to medical practice, and understanding responsibilities within the current systems for raising concerns about safety and quality.

4b (2003) Know about, understand and be able to apply and integrate the clinical, basic, behavioural and social sciences on which medical practice is based. 1.8 (2009) The graduate will be able to apply to medical practice biomedical scientific principles, method and knowledge relating to: anatomy, biochemistry, cell biology, genetics, immunology, microbiology, molecular biology, nutrition, pathology, pharmacology and physiology.

6c (2003) Understand the principles of audit and the importance of using the results of audit to improve practice. 3.21(c) (2009) Continually and systematically reflect on practice and whenever necessary, translate that reflection into action, using improvement techniques and audit appropriately - for example, by critically appraising the prescribing of others.

Specific Disease and specialty topics:

On graduation, students should be able to:

- Recognise life-threatening complications of substance misuse, including septicaemia, pulmonary emboli and overdose and be able to carry out appropriate interventions
- Describe and explain the links between substance misuse and:
    - Accidents and violence (including sexual assault and sexually transmitted diseases)
    - Lung disease, specifically tobacco, "crack" cocaine and cannabis
    - Anxiety, depression, dementia, schizophrenia
    - Acute psychotic episodes
    - Self-harm and suicide
    - Heart disease and hypertension (myocardial infarction and cocaine use)
    - Liver disease, pancreatitis and gastritis
    - Infectious diseases, including HIV and hepatitis B and hepatitis C viral infections

    - Cancers
    - Sleep disorders
    - Weight problems
    - Neurological conditions
- Describe the effects on pregnancy and on the new-born of misuse or dependence on alcohol, tobacco or illicit drugs
- Describe the effects of substance misuse in the family on children

Meets GMC outcome:
4b (2003) Know about, understand and be able to apply and integrate the clinical, basic, behavioural and social sciences on which medical practice is based. 1.8 (2009) The graduate will be able to apply to medical practice biomedical scientific principles, method and knowledge relating to: anatomy, biochemistry, cell biology, genetics, immunology, microbiology, molecular biology, nutrition, pathology, pharmacology and physiology.

The outcomes are presented as high level outcomes, so as to make them as flexible as possible in comparing them with and applying them to the diversity of UK curricula.

SECTION 3: Curriculum Development & Implementation Resources

3.1 Curriculum – what is it?

Curriculum derives from the Latin word 'currere' *meaning* to run, with the original meaning of curriculum being a course, but one that is run around [35]. It has since come to mean a course of study or syllabus and learning experiences of an educational institution, effectively a framework for delivering structured learning to an audience. Prideaux's (2003) [36] definition states: "*The curriculum represents the expression of educational ideas in practice. It includes all the planned learning experiences of an educational institution."* The Postgraduate Medical Education and Training Board (Grant et al, 2004) [37] define curriculum as the "*Statement of the intended aims and objectives, experiences, outcomes and processes of an educational programme".*

Approaches to medical curricula formats include horizontal and vertical theme based, modular, integrated, spiral curriculum, trans-disciplinary learning, including the use of self-directed and guided learning through case based learning, problem based learning with access to virtual learning environments (see Glossary of terms)

Curricula generally have at least four key components: content; teaching and learning strategies; assessment processes; and evaluation processes [36]. Development of a curriculum is usually a complex and lengthy iterative process.

Curriculum governance ensures that the medical curriculum is of high standard and that a strategic supportive accountability framework is in place for on-going quality improvement of effective medical education. Good governance enables the development of an effective curriculum implementation programme. The following are core principles of curriculum governance:

- Teaching needs to be quality assessed and consistent information needs to be given by different teachers.
- All changes to the curriculum content will need to be ratified by the appropriate committees for each medical school.
- Teaching needs to be assessed by setting aims and objectives and agreeing ways to assess that those aims and objectives have been met.

3.2 The Importance of and Rationale for an Integrated Curriculum

An integrated curriculum is one where subjects are taught through a range of themes, disciplines, and various mechanisms of delivery, as opposed to studying subjects in isolation.

In practice, having an integrated curriculum means moving away from a single-discipline orientated approach to having learning outcomes for substance misuse being delivered across the years and integrated across disciplines. This requires flexibility and co-ordination within the curriculum structure and process. Approaches that provide an integrated learning include problem based learning (PBL), case based learning (CBL) and a spiral curriculum (see Glossary of Terms).

Problem-based learning and case based learning provide opportunities for medical students to learn from being presented with a case, setting out learning objectives and discussing management through problem-solving techniques. This method of teaching fits well with an integrated curriculum. A spiral curriculum also fits well with an integrated curriculum as this enables later learning to be related to knowledge gained at earlier stages of the MBBS and for this knowledge to be further enhanced.

An integrated curriculum that has substance misuse across the teaching and learning period in medical schools has several advantages. Newly appointed doctors, such as Foundation Year 1 doctors, working in various areas of medicine will encounter clinical situations either directly or indirectly related to substance misuse. They will be faced with situations when integration of medical knowledge and skill is a necessity. A common example is when a newly appointed doctor is treating a 50 year old lady presenting with seizures. Such a doctor would be expected to have sufficient knowledge and skill to consider a number of aetiological factors, including high fever, head injury as well as alcohol dependency. The doctor would need to:

- have the knowledge and skill to assess the lady and to recognize alcohol dependency;
- be able to assess and understand associated health and social problems;
- know which management steps / processes would need to be taken;
- recognize, assess and relay the risks and vulnerabilities related to alcohol dependency, especially if severe;
- be aware of the tendency for the lady to avoid accepting the risk associated with alcohol dependency; and,
- challenge any stigma or discrimination related to use of alcohol that may arise.

This example describes how the effectiveness of medical practice relies on the doctor's ability to integrate acquired medical skill and knowledge. Providing opportunity for vertical and horizontal integration of substance misuse learning, as opposed to the single-discipline learning approach, goes a long way towards having 'tomorrow's doctors' as 'good doctors' undertaking 'safe practice'.

In summary the rationale for an integrated substance misuse curriculum within medical schools are:

- Teaching spans the whole training period of the undergraduate giving a greater opportunity for teaching.
- Substance misuse is seen in every medical specialty and missed diagnoses can mean suboptimal health treatments. New doctors need to think about and ask about substance misuse in all specialties.
- Integration enables the challenging of negative attitudes and adding to knowledge at an early stage of training.
- Attitudes of other medical colleagues to substance misuse and psychiatry can be positively influenced by closer working links between those involved in undergraduate training. Learning also then occurs at a postgraduate level between specialties.
- Integration facilitates the requirement for medical students to learn how to synthesize knowledge and skill and deal with relationships between various morbidities.
- Integration makes the application of medical knowledge and skill more meaningful, enabling the learning experience to be contextual, more positive, and longer lasting.

With benefits being:

- Teaching across the years woven through the disciplines and specialties and not located solely in one area of medicine or psychiatry.
- Teaching by experts in various fields, across disciplines and specialties.
- Learning outcomes integrated vertically and horizontally through the curriculum across the academic period.
- A co-ordinated approach to medical teaching.
- A positive and enabling learning environment, facilitating self-learning.

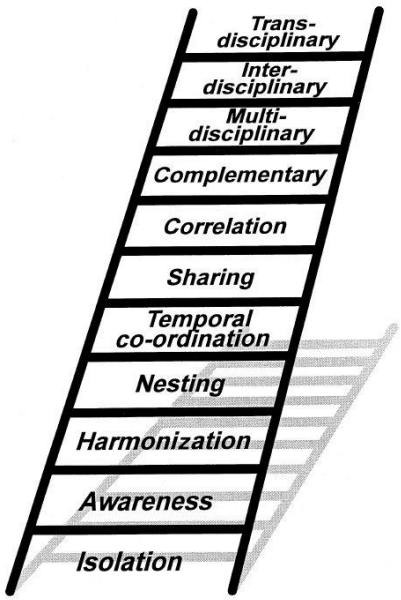
3.3 Core Theories of Curriculum Development

Development or curriculum alteration is a lengthy, iterative, process likely to involve a number of steps in each repetition:

- Identification of key stakeholders.
- Arranging a meeting of those key people.
- Pulling together all the materials / knowledge that is already amassed.
- Outlining the aims and objectives to be met and then looking at the steps and individuals required to make that happen.
- Identification of modes of delivery.

In curriculum development, moving from a discipline-orientated curriculum to an integrated curriculum is a process which involves a strategic change in direction in medical teaching.

Harden [38], in an article about development of an integrated curriculum, described the move towards an integrated curriculum as one of a continuum of 11 steps between two extremes – i.e. from isolation to awareness, harmonization, nesting, temporal co-ordination, sharing, correlation, complementary, multi-disciplinary, inter-disciplinary and trans-disciplinary.



The 11 steps on the integration ladder. (after Harden 2000)

In ***'isolation'*** (step 1), teaching of one discipline is organised without much attention to the teaching of the other disciplines. The focus is on whether the curriculum covers all areas within each discipline.

In the second step, ***'awareness'***, teachings continue as in step 1, however, teachers are aware of the teachings in the other disciplines.

'Harmonization' (step 3), refers to the opportunity for teachers from the various disciplines to consult with each other on what is being taught and make connections between subject areas, even though the disciplines remain separate. Consultation is both informal and formal through academic committees and meetings for curriculum development.

'Nesting' (step 4), refers to the practice wherein medical teachers draw upon areas from other disciplines whilst teaching areas in their discipline. Although the disciplines remain separate, there is recognition of the broader curriculum.

In ***'temporal co-ordination'*** (step 5), the timing of teaching of the various areas in the various disciplines is negotiated between subjects, facilitating the possibility of teaching related areas in sequence. In this approach, disciplines continue to be taught separately but the curriculum structure facilitates the establishing of links between disciplines.

In step 6, ***'sharing'***, disciplines jointly plan and implement a curriculum programme. This practice tends to be perceived as relevant only for complimentary disciplines and for complimentary discipline areas to share concepts, skills and attitudes.

In ***'correlation'*** (step 7) discipline teaching remains separate but the curriculum enables the running of separate sessions to integrate the various teachings of the various disciplines.

Step 8, the ***'complementary'*** approach, is very similar to step 7, however, this time the curriculum enables greater emphasis to be given to the integration sessions than to the single-discipline sessions.

The ***'multidisciplinary'*** approach (step 9) refers to a thematic approach to teaching, whilst maintaining discipline identity – e.g. teaching about cardiovascular problems through teachings of different disciplines, such as, anatomy of the heart, physiology, pharmacology, etc. facilitating students learning about aetiology (e.g. QT prolongation - methadone changes the electrical activity of the heart, which can be lethal) and management. The contributions of the various disciplines to teachings around the theme are defined clearly within the curriculum.

Step 10, the ***'interdisciplinary'*** approach follows on from the previous approach, with a blurring of the boundaries between the various disciplines. The ultimate step (11) is the ***'trans-disciplinary'*** approach, which once again is a further progression from the previous step where the curriculum transcends the individual disciplines. Real life medical situations would be the focus of the learning with the integration being done in the mind of the student.

3.4 Integrating Substance Misuse Teaching into the Undergraduate Curriculum

A curriculum for substance misuse by its very nature relates to and overlaps with every professional subject taught within a medical school. Its implementation, including the delivery of the teaching, will need to be distributed across the clinical disciplines and at a time and level appropriate to the development of students' progression and learning. Substance misuse teaching needs to be tailored to the school's curricula. The work to harmonise, synchronise, and integrate the distributed delivery, while helped by the general guidelines, will have to occur at the local level.

Listed below are some key issues relating to integration to be aware of:-

Teaching in a silo: the first obstacle to achieving this integration lies in the fact that, even though the teachers at present are including the subjects relevant to Substance Misuse into their otherwise aimed teaching, they are doing so with minimal awareness, and therefore without the consideration, of what their colleagues are doing in the same respect within the subjects that they are teaching. While there, almost certainly, will be gaps (in terms of the desired detail level of the Substance Misuse curriculum) there may also be duplications (possibly, but not necessarily useful as re-enforcement of teaching).

Teaching in an uncoordinated way: it is unlikely that there has been any attempt to synchronise sequence and timing in terms of the Substance Misuse subjects (e.g. so that the students could use the knowledge of the basic when considering specific). Similarly there is unlikely to be any prior consideration given to the sequence of teaching of the terms and concepts from the specialties which may influence student's ability to learn about Substance Misuse (e.g. the skills of the basic patient assessment necessary to be able to identify specific signs of Substance Misuse).

Absence of overview: usually the relations between other subjects and Substance Misuse have not been analysed. The fact sheets (Appendix 3) were prepared by experts with in-depth knowledge of both substance misuse and the relevant clinical specialty. They identify a minimum set of learning objectives relevant to both substance misuse and enable the identification for demonstrating common themes and requirements thus creating basis for harmonisation between the speciality and substance misuse.

Communication process: communication between the teachers is essential for the isolation phase to be overcome. However, the communication is not likely to be resolved by a single successful meeting. A concise documentation of the coverage of the Substance Misuse by individual teachers (as one of the results of the mapping exercise) will allow any of the colleagues to become familiar ('awareness' in Harden's ladder model) with the others' approach and their range of coverage. This will allow to capitalise on distributed work of others (instead of duplicating) and to harmonise teaching of the students.

Harmonisation process: the harmonisation occurs when teachers delivering different subjects consult and agree on, however small, changes to their teaching plan aimed at synchronising with others. Agreeing the assessment procedures (by assuring Substance Misuse place in the existing exams or by creating dedicated assessment procedures) may be a part of the harmonisation exercise. In Appendix 2 guidance relating to the assessment process may be of use in this context.

The 'nesting' step of integration will occur when teachers decide to use the subjects from the Substance Misuse curriculum to enrich the teaching of their discipline. To an extent, that is expected to have already happened (which the mapping exercise will systematically describe) but not necessarily in a way including a proper and specific recognition of Substance Misuse as a sub-discipline and of its importance generally. A desired outcome of this phase is for substance misuse content to be included by other specialists within the delivery of teaching their own speciality. A good indicator of whether this step has been achieved could be if the teachers include case examples of the addicted patients to illustrate concepts from their own course (e.g. one of the case examples or a virtual patients used to present seizures could also have characteristics of an alcohol dependent individual and discovering that this might be a part of the students' exercise).

Vertical co-ordination: for the temporal co-ordination aspect to be resolved it is necessary that, whilst each of the subject leaders remains responsible for their own subject delivery, they know and acknowledge in practice the schedules of the others – aiming at synchronisation as described earlier in this section. This is a generic and a very difficult problem of the medical teaching as a whole. The expectation here is for the Substance

Misuse to be recognised within the School policy of time co-ordination on the same basis as any other major subject within the general curriculum - achieving a perfect synchronisation is an ideal to aspire to. The use of core cases may be important, such as following a patient with alcohol-related variceal bleeding through acute management to community treatment for alcohol misuse.

It is vital that any opportunities within the School for joint teaching are identified and considered (the 'sharing' phase):

> Two [or more] disciplines may agree to plan and jointly implement a teaching programme. The shared planning and teaching takes place within the disciplines where overlapping concepts or ideas emerge as organising elements. The disciplines which come together to offer such a programme are usually complementary subjects and the joint course produced emphasizes shared concepts, skills and attitudes. The focus of the course is usually in these shared elements.
>
> (after Fogarty[39], 1991 and Harden [38], 2000)

Harden [38] gives an example of: 'a course in community child health run jointly by a department of child health and a department of general practice'. Adding the impact of substance misuse (by the children themselves or by their parents) to the syllabus of a module on child health and development is an example of a practical approach to integrating substance misuse into that aspect of the curriculum. Such a module could easily mention the "hidden harms" when one of the parents misuses drugs.

Existing practice, for example, such as joint courses run within the medical school curriculum can be used as models for integrating substance misuse into the curriculum. Every medical school has such courses, typically established through identification of common areas of teaching or during the purposeful addition of a new subject to the School curriculum. The experience and knowledge of the successful colleagues should not be under-appreciated.

As Substance Misuse relates to practically every other subject, the curriculum delivery is likely to be widely distributed horizontally and vertically. Therefore, the curriculum correlation – or integration of the knowledge related to Substance Misuse while studying other core topics - is of a particular importance.

Dedicated times might be considered for students to meet (in an organised way, with or without a teacher/facilitator, possibly with set PBL tasks or individual projects) and relate what they have learned in other modules to specific cases or problems from Substance Misuse. This, together with the previously described formal assessment requirement, is vital for the subject to be recognised on a par with other disciplines, according to its importance.

Another aspect of the Substance Misuse curriculum integration is to assure its representation in the Theme Based Teaching that may exist in the School. Those integrated sessions, when represented in the School curriculum, are organised around a common theme or a topic to which different disciplines contribute.

The recognition – and integration – of Substance Misuse into the curriculum will only be complete if such 'complementary' contribution from the Substance Misuse subject is routinely

considered as a vital part of the teaching. Again, a part of this recognition should be an inclusion of the Substance Misuse in any form of the assessment that accompanies such mixed sessions.

It is very likely that educational leaders of the other subjects who begin the work on their contribution to a new Inter-disciplinary course will consider illustrating their section with the examples relating to Substance Misuse in context of their discipline (as described previously). This will be facilitated by offering some ready-made resources.

Similarly, the specific approaches that a school may undertake in the field of Multi-disciplinary, and Inter-disciplinary or Trans–disciplinary learning should be seen as the opportunities to introduce themes and objectives from the Substance Misuse curriculum.

As Substance Misuse is going to be a newly developed curriculum, initially those responsible for organising such teaching initiatives may not be inclined to recognise Substance Misuse in the same way as they are used to in the case of the traditional, long-established subjects. The recognition of the Substance Misuse curriculum importance on the national level as well as by each of the Medical Schools gives full justification to expect and demand equal treatment in this respect.

SECTION 4: Reviewing & Developing the Curriculum & Managing Change

4.1 Good Practice in the Organisation and Delivery of the Curriculum

The most important aspect of managing substance misuse in the undergraduate curriculum is that of co-ordinating the content, delivery and assessment.

(Substance Misuse in the Undergraduate Medical Curriculum for Substance Misuse, 2007 [31]

The model used is for medical schools to have an Academic Champion(s) for substance misuse whose role is to motivate change and to supervise the work of an appointed local curriculum coordinator to implement the integration of substance misuse teaching and assessment in the undergraduate curriculum. Together, they must be equipped with appropriate membership of planning groups and clear routes into the management structure of the curriculum.

This ensures that:

- the core learning outcomes for substance misuse are covered at appropriate points in the curriculum,
- opportunities for learning are maximised, and
- the student sees a 'joined-up' approach to the problem of substance misuse.

Without co-ordination, substance misuse risks being an un-planned fragmented topic, with students' achievement of core outcomes left to chance.

Despite the varying nature of their curricula Medical Schools need to ensure the teaching of substance misuse is integrated across all stages of the curriculum rather than being isolated as a specialist topic, typically within Psychiatry.

Major topics across different years of the curriculum include:

- Attitudes to controlled substances, alcohol and tobacco, and misuse of the prescription medication. Including social stigmatisation of the patients and relation of substance misuse to doctors' own health and fitness to practice.
- Basic knowledge and awareness of the substance misuse concepts.
- Scientific basis of addiction.
- Clinical assessment of addiction.
- Clinical treatment of addiction.
- Links to postgraduate learning and training.

Where exactly these topics occur will vary from course to course, but it is good practice to introduce the first three very early on in the student's experience.

Students may have the opportunity to learn more about substance misuse beyond the core learning outcomes through Student Selected Components or Special Study Modules (SSM) and other learning opportunities. These may be led by specialists in drug or alcohol treatment, but the opportunities for staff to offer an SSM concerned with abuse, dependence or treatment occur in many medical specialties.

Systematic planned assessment of students' learning is vital in ensuring that the core outcomes are covered. Most curricula now have integrated examinations, focusing on knowledge, skills and behaviour. Substance Misuse topics can be introduced into many of these.

The general principles underpinning the assessment of any clinical topic apply to Substance Misuse. A general guide to the principles of assessment, found in 'Assessing Substance Misuse Learning' (Appendix 2), presents in a systematic way the major questions to ask when developing either entire examinations or writing individual items for an examination.

The major challenge is to identify where and how learning outcomes relevant to substance misuse can be assessed across the curriculum.

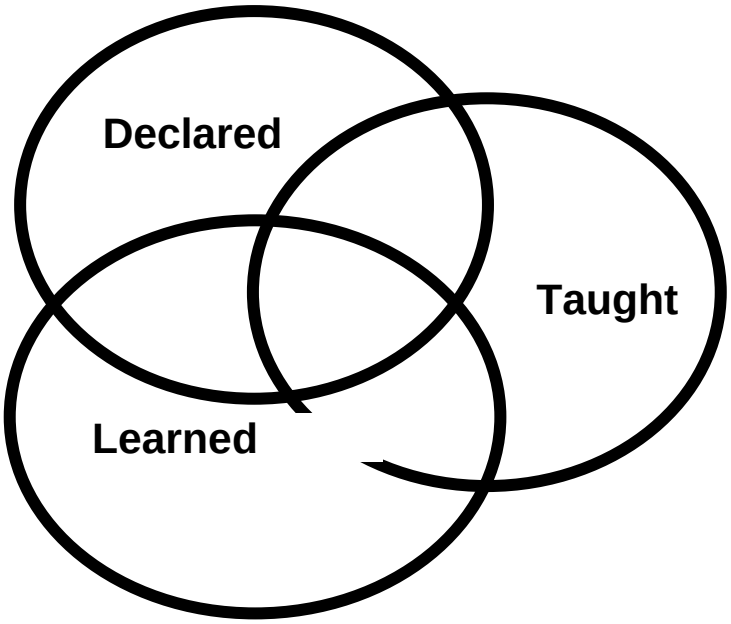
The systematic process of review and evaluation of substance misuse education and subsequently bringing it the required standards must involve:

- a deliberate approach to managing change,
- mapping the curriculum against the core aims and learning outcomes and integrating innovation with the existing teaching, and
- evaluating the outcome of changes.

Successful innovation in substance misuse education will also depend on the participation of students and teachers in a systematic evaluation of the experience. Mechanisms seeking feedback from both groups should be implemented for individual learning events and the substance misuse curriculum as a whole.

4.2 Reviewing and Developing Substance Misuse Education in your School

Ensuring that core aims and outcomes for undergraduate teaching in substance misuse are an integral part of the undergraduate curriculum requires a process of mapping, effective planning, and effecting change. Therefore the mapping exercise is a key means of constructing a comprehensive view of the current substance misuse curriculum aiming to identify what is covered, not covered and what could be added. Harden [(38)], on mapping, describes the concepts of declared, delivered and learned:



- the declared curriculum is what is assumed to have been learned by the students.
- the delivered curriculum is what is actually taught to students.
- the learned curriculum is what student has in fact learned and is demonstrated such as through assessment.

Additionally there are also the concepts of the seen and unseen curriculum:

- the seen curriculum is what is clearly apparent, well documented and can be easily identified.
- the unseen curriculum is hidden learning opportunities, which are not shown on curriculum documentation/ resources.

Overall curricular development and review should always include substance misuse learning objectives to prevent them being unintentionally lost during the process of change. Similarly, changes in teaching personnel (teachers and support staff) should take into account the requirement to maintain high quality delivery and assessment of substance misuse learning objectives.

4.3 Mapping of Substance Misuse Teaching and Learning Resources

The task of mapping is complex and requires time to undertake it fully. It comprises distinct phases

- Gathering and identifying key sources of information about the curriculum including clinical teaching and placements.
- Accessing the curriculum content via documentation and online curriculum databanks
- Recording the information about substance misuse teaching and learning outcomes

The mapping matrix in Appendix 1 can be used as it is, or adapted to local circumstances. It incorporates the GMC outcomes from *Tomorrow's Doctors*, 2003, and 2009 in brackets to aid preparation for GMC review visits. The mapping matrix can be used at the level of the whole course, attachments or modules or at the level of individual teaching sessions to

- map current teaching of substance misuse;
- identify where in the course the outcome is learnt;
- map the intended learning outcomes;
- map the teaching and learning activities used;
- map the types of assessment used for substance misuse;
- map resources such as books, journals, websites, podcasts etc.
- map or gather information about SSMs/SSCs and clinical teaching and placements.

The mapping and data gathered will enable an assessment of what changes to existing teaching, or new teaching will be required to meet the learning outcome of the core curriculum for substance misuse. This will need to be balanced against the resources available and consideration given to how any unmet learning objectives can be covered through the use of other resources such as e-learning or guided reading.

Hints and tips for mapping include:

- Link with your academic champion/s to plan your approach to the task with them.
- Get your academic champion to identify and introduce you to key curriculum people
- Make your presence known through attending relevant meetings
- Gain an understanding of the curriculum process and how curriculum changes are managed
- Identify areas in curriculum where substance misuse is directly taught

    - Map year/semester where teaching occurs
    - Identify which substance misuse learning outcomes is covered.
    - Map the time/ hours of teaching
    - After initial mapping- compare results against desired substance misuse learning outcomes as set out in the Corporate Curriculum Guidance
    - Meet with key teaching staff
    - Identify potential opportunities for curriculum improvements

Identify key resources on substance misuse such as books, journals and multimedia resources, and virtual learning materials - The library will be the main support structure for these resources but additional resources may also be delivered through an Intranet or via departmental 'libraries'.

The depth of knowledge required and at what stage in the curriculum will be different for medicals schools so work with your academic champion to determine whether an outcome is met or not.

Assessments – due to the confidential nature of assessments it is advised that one should map the type of assessment that is done and the general nature of what is being assessed

In addition to the above there are other areas that offer opportunities for substance misuse to be covered and these include:

Clinical placements provide opportunities for students to learn about substance misuse topics and to work with patients and carers in the diagnosis, treatment and management of health issues concerned with substance misuse. Mapping the curriculum will have identified where teaching on substance misuse occurs formally, but there will be many instances of informal learning. It will be important that students are aware of good practice and have learned how to treat patients, in terms of recognising the contribution of substance misuse to individual patient health and illness, in carrying out specific clinical procedures and

interventions, and in displaying appropriate attitudes and behaviours. It may be helpful to review clinical log books and other records of clinical learning that go through the whole curriculum to see where substance misuse topics may be included.

Student Support Services although not strictly part of the curriculum development and change process, if we are to consider the wider impact of substance misuse on medical students and doctors, it will be important to educate personal and academic tutors and other responsible for providing support and guidance for medical students. There may be opportunities to involve occupational health and other university support and guidance structures in helping to develop and deliver an integrated approach to student welfare in its widest sense across the medical school. Other formal mechanisms and committees (such as Fitness to Practise committees) may benefit from being provided with more factual information, including national statistics, case studies, referral and advice agencies, about the scale and nature of substance misuse amongst medical students and practising clinicians.

Student Union – liaise with the union about promotional materials for freshers' week encouraging them to check that they do not inadvertently promote substance use, for example through photographs of freshers' week showing students drinking. Encourage them to think about the message that promotional materials give out overtly and implicitly. Do they promote a healthy culture and emphasize support for students? Are there student/school policies regarding use of drugs, alcohol? Organising quizzes in freshers' week on all subjects including tobacco, alcohol and drugs is a good way to start to raise the subject

Medical School Recruitment - making contact with admissions tutors could help to inform them of some of the statistics and key health issues involved in substance misuse so that they can ask informed questions of prospective students. This will also help raise awareness of the issues amongst interviewers and interviewees. Offer to put some information together for the interviewers. Questions asked of prospective UK medical students at interview include some that focus specifically on substance misuse topics such as:

- *What are the arguments for and against banning the sale of tobacco?*
- *What are the arguments for and against the decriminalisation of drugs such as cocaine?*
- *How do you think doctors should treat injury or illness due to self-harm, smoking or excess alcohol consumption?*
- *Do you think that Class A drugs should be legalised?*

Whereas others fall into wider 'health/medicine and society' areas such as:

- *What do you think is the greatest threat to the health of the British population today?*
- *What do you think was the greatest public health advance in the 20th century?*
- *Do you think doctors should set a good example to their patients in their own lives? How or why might this be difficult?*
- *In what ways do you think doctors can promote good health, other than direct treatment of illness?*
- *How should the health service achieve a balance between promoting good health, and in treating ill health?*
- *Do you think medicine should be more about changing behaviour to prevent disease or treating existing disease?*

ISC Medical Interview Skills Consulting at http://www.medical-interviews.co.uk/interview-questions-medical-school-interviews.aspx

Engaging Medical Students in Substance Misuse education
At present, whilst the subjects related to Substance Misuse may be taught as a part of other courses, they are not recognised as coherent curriculum and may not be adequately represented in the exams or other formal assessment. From the point of view of a 'survival orientated' student this makes them appear unimportant or 'practically' non-existent.
This means that engaging the students' needs to be considered exactly as if the subject did not exist, this can be done through eliciting their views on the need for substance misuse teaching through surveys on how well substance misuse is covered. The very basic principles need to be observed and 'checked' as practically covered for substance misuse:

- Medical students need to appreciate the purpose of substance misuse training
- Teaching methods need to be interactive and interesting / stimulating to the learner
- Competencies must be clear
- Competencies must translate into clinical practice
- Reference to local /regional / national / global substance misuse trends and other epidemiological data must be presented in a form relevant to practice context (not boring)
- Culturally competent training must be provided
- Involving students in curriculum planning through their student union
- Involving students in teaching some aspects (eg personal safety issues)

4.4 Managing Change within the Curriculum

Integrating the core aspects and learning objectives in substance misuse within the undergraduate curriculum requires effective change management. It involves change within multiple medical education organisations which will be reflected in improvement in overall public health.

Much of the existing literature on managing and leading change is drawn from management research in the business world. Implementing curriculum change effectively can benefit from drawing on some of these techniques and guidance. Below is an attempt to relate such approaches to medical education and the change required for implementation of substance misuse into the curriculum.

Although effecting or managing change is often described in a linear fashion, it is almost always iterative with the various steps being carried out simultaneously, or in a different order including moving backwards and forwards through stages. The main thing is to be forward looking and positive and to maintain the momentum of change.

The person 'championing' the change may appear to have a vested interest in trying to ensure that substance misuse is embedded into the curriculum. It is important to be objective and remain realistic about what can be achieved in terms of the overall curriculum. This is not an easy judgement. Finding a right balance between what should be done in the long term and what is achievable in a given, shorter time is possibly one of the most testing aspects of the championing role.

Medical curricula are crowded and there are many competing interests, subject disciplines and clinical specialties, all involving people who firmly believe that their topics are amongst the most important in the medical course. Questioning that view is unnecessary. After all, all subjects are important and strategy of implementing subject misuse curriculum is based on capitalising on existing resources and efforts. The appreciation of the role of others is a first step in achieving recognition of substance misuse as a subject.

Setting a vision of how substance misuse teaching and learning can be achieved within the curriculum will be vital. The vision needs to be inclusive taking advantage of the multitude of disciplines overlapping with substance misuse. Having a map of how substance misuse is, and may be, taught throughout the existing undergraduate programme is a tool that can be used for communicating with the relevant committees about the need to include relevant topics in the syllabus and in assessments and examination.

Mapping of all teaching and learning activities and assessment points that cover or relate to substance misuse topics allows for the identification of further opportunities for including substance misuse subjects into existing courses and teaching sessions. Again, comparing results of the mapping against the learning outcomes set out in the corporate curriculum, and the final learning objectives of the curriculum should assist in this process. The factsheets accompanying this toolkit provide evidence that the same essential skills (e.g. recognising general signs of the substance abuse, approach to a patient with the substance misuse problem, awareness of behavioural patterns, etc.) may be taught together with many specialties: possibly in a distributed fashion with reinforcement followed by assessment.

The mapping matrix (Appendix 1) has been designed to map what goes on in the School curriculum against the learning outcomes identified by Corporate Curriculum in the national Substance Misuse Project. The matrix can be adapted to fit local needs.

Making yourself aware of what is going on in your own School and being able to draw on examples of good practice elsewhere will ensure your position as the School expert and further enhance your effectiveness as a champion of change.

Change (be it organisational or curricular) is driven by both internal and external factors and effective change management involves being able to identify these and use them to your advantage.

External drivers that may be highlighted as evidence supporting the inclusion of substance misuse topics in the undergraduate course include:

- the impact on population health and UK healthcare in terms of cost, morbidity and mortality and the wider social costs of substance misuse in terms of the impact on families, crime rates, poverty and homelessness
- the need for graduates to be equipped with the range of knowledge, skills and attitudes to care for people who have been misusing substances so that they can go onto Foundation training in any area of the UK with competence and confidence the support by the Department of Health in developing and implementing the core guidance and national and local co-ordination for substance misuse in undergraduate medical education
- recognition that substance misuse is a problem within the medical profession itself
- the requirements from the GMC that undergraduate medical education includes substance misuse topics in the curriculum (see both *Tomorrow's Doctors (2003)* [30], especially paragraphs 16,17,35 and 2009 [30] especially 1.9(g),1.11, 2.13, 2.14)
- examples of good practice from other medical schools utilising the resources that have been developed through this project and others

Internal change drivers that you might identify include:

- people or groups interested in developing substance misuse teaching or in receiving recognition and help for the substance misuse related teaching they deliver (help in this context may come through shared resources or co-ordination of teaching with others)
- a planned review or restructuring of the curriculum which could lead to opportunities for including substance misuse topics (or recognising existing elements – and protecting their value through linking to assessment)

- organisational restructuring or appointments which might include individuals with the power or influence to effect the changes you want (it is vital to understand the general vision of such person and present elements of substance misuse curriculum in harmony)
- connect with student support services through academic and personal tutors and the student union
- identify any possible barriers

Five key questions to ask yourself when planning change

What is the simplest thing I can do?
What is the most radical thing I can do?
Who might help me?
Who might stop me?
How will I know I've succeeded?

Gale and Grant (1998) [(40)] describe some of the specific features of managing change in a medical education context. They identify six professional characteristics and styles which should be considered by those trying to facilitate change. These are presented below with minor modifications/comments relating to the substance misuse curriculum.

Consultation Colleagues expect to be consulted on change. Identify the people with whom you need to consult (who have the power and influence to get the changes implemented – or stop them) as well as those with whom you want to consult. Kotter [41] would call this your 'guiding coalition' – the people who can push a change through an organisation.
Demonstration projects Change needs to be presented on a rational basis rather than emotionally. It needs to be evidenced by the work of others or through presentation of reports of similar changes made elsewhere.
Evolution Whilst national project is a unique opportunity to introduce major changes it is also important to see where gradual (or incremental) change is preferable to radical wholesale change. This is likely appropriate to introducing small scale changes to a course. You can look for a number of opportunities to introduce substance misuse teaching, learning and assessment over time. Added together they can add to a big change but will have been achieved more smoothly than trying to make a radical change. Work out what is achievable and what is not – keep it simple.
Ownership "The perception that the changes proposed are your solution to your problems". The change leader has to achieve a balance between owning and driving the change themselves and ensuring wide uptake by many people. Sometimes, wide ownership can lead to dilution of original ideas or ambiguity in the direction and control of the process: it is important to keep sight of the overall aims. People should start to own the idea that substance misuse teaching and learning should be a recognised part of the core curriculum.
Power to hinder It is important to identify who in the organisation has the power to block your ideas or changes or to hinder progress ('blockers' or 'fence sitters'). Preferably, identifying should occur in anticipation otherwise the first sights of the obstruction must be recognised. These can be overt or can be more subtle and passive: failure to act on something, letting papers pile up on the desk or emails remain unanswered can all be signs that individuals are less than committed. Discussion and compromise will be needed to reduce the effects of blockages.
Commitment, energy, enthusiasm and motives Change leaders need to keep a high level of personal energy and commitment in order to enthuse and motivate those around them. Change agent's motives need to be seen as driven by a wider need and not simply by personal gain, the agenda needs to be transparent.

Resistance to change

Experiencing resistance to change is normal, and it is helpful to be aware of what barriers to change you may meet when planning the integration of substance misuse into the curriculum

- There is finite teaching time and teachers may not be keen to 'give up' what is seen as their core teaching time.
- Substance misuse may not be seen as highly relevant to our colleagues in other specialties.
- Other disciplines might find that substance misuse is too much in the spotlight, shifting students away from giving importance to learning objectives related to the other specialties.
- Medical schools may not have the capacity within their substance misuse services to provide the teaching resources in terms of staff time.
- Teaching may be provided by Trust and Medical School staff and there may again be different teaching priorities.
- Perception that substance misuse is a specialty and is only the responsibility of those working within the specialty
- Lack of appreciation of the burden of substance misuse problems.
- Stigma and discrimination related to use of substances.
- Cultural barriers.
- Medical schools and medical teachers may hold the view that integration is already happening within the current curriculum structure and that the move towards having an integrated substance misuse curriculum is unnecessary.
- An integrated substance misuse curriculum would require adequate knowledge on relationships between morbidities. Substance misuse specialists involved in teaching may consider that they lack expertise to talk about the links of substance misuse with the conditions within other specialties.
- Be aware that not everyone will take on your suggestions.

These barriers have to be negotiated whenever curricular redesign is embarked upon and thematic issues are introduced. Understanding these and anticipating these should enable you to find ways of handling them effectively. For example if other disciplines consider that substance misuse is too much in the spotlight, shifting students away from giving importance to learning objectives related to the other specialties can be used to as a reason for developing substance misuse resources within virtual learning environments. The curriculum can be crowded with competing interests, disciplines and clinical specialities so appreciate role of others in order to achieve appreciation of substance misuse as a subject

The table below provides examples of core activities, 'tactical choices' and related activities in implementation of a substance misuse curriculum.

Core activity	**Tactical choices**
1.Identify a shared problem, establish the need or benefit	**Seek solutions, do not sell them, consultation, conjunction of local or national circumstances, lobbying**
○ *use relevant policy guidance on substance misuse as for lever for change* ○ *refer to General Medical Council (GMC) publications on professionals' health and fitness to practice* ○ *use other education or health drivers eg. inter-professional learning, F1/F2 curriculum, local health needs or expertise* ○ *seek out people/groups with common interests in seeing SM learning and teaching*	

being implemented well in the medical school eg. GPs, psychiatrists, public health, researchers from different disciplines eg sociology, psychology, basic sciences. o *benefits to your medical school might include being seen as a centre of excellence in SM teaching, drawing in research grant funding* o *seek out curriculum reform opportunities or developing new ways of teaching and learning, look for funding for educational projects which use SM as a vehicle such as virtual learning projects* *(Kotter[42] calls this stage – 'establishing a sense of urgency')*	
2.Power to act	**Ownership, key people, using committees, borrowed power, positional power, political or external power, expertise, information, resource control, prior agreement to act**
o *identify the sources of power and influence (subject disciplines, senior management, key committees, curriculum change agents, researchers)and the resources needed to implement your change* o *create a 'guiding coalition', a group with enough power to lead the change and that will work together as a team – an interdisciplinary/interdepartmental steering group.* o *think small at first, eg. gain agreement to carry out a mapping or review in line with the SM core learning outcomes, raise awareness about your work and the guidance, attend curriculum committees to share information.* o *keep your own ideas about solutions within a small number of people and let others think of their own ideas – this will help spread ownership* o *use external agencies/people if they are available and appropriate, join a network of other interested SM teachers* o *become the organisation's SM 'expert', gain approval (from a senior individual or committee) to attend national working groups and conferences, find out all you can about SM teaching and learning nationally so that you can fit ideas to your own curriculum and modify other people's ideas/experience* o *try to identify some funding to support a curriculum development or innovation in SM, this will raise the profile of the change initiative*	
3. Design the innovation	**Feasibility, resources needed, starting time and duration, scale and degree, avoid losers, predict barriers and pathways**
o *the design of the scale and scope of curriculum change should begin to emerge from the discussions held with others at pre-design stages* o *develop your vision and strategy to help direct the change effort and achieve the vision* o *effective and sustainable change takes time - to become approved, to become accepted practice, to work through a system, to be fully implemented and evaluated* o *if an organisation is undergoing many changes at once it becomes overloaded and inertia and apathy result. Choose your time to introduce change carefully, work with people who have the capacity to take on and champion your changes* o *assess the feasibility of your changes, don't be too ambitious, but don't miss opportunities either. Get involved with wider curriculum developments so you are seen as an educator in the broader sense* o *look at the resource implications of what you are suggesting (see below for hints about 'supporting elements' of the curriculum)* o *try to analyse the positive and negative forces for and develop strategies for overcoming barriers or negative forces* o *the change should serve to minimise the number of people who lose position and maximise those who stand to gain, try to actively involve people who may be affected by the change and find roles for them* o *look at favourable factors within and external to your organisation, such as government health and educational initiatives, that might help to provide a vehicle for introducing your change or design alongside another initiative eg. an IT project might*	

include development of resources on substance misuse, you might seize opportunities to work with medical students to raise awareness in the whole university about tobacco, drugs and alcohol use and misuse by tapping into national awareness and health promotion campaigns (eg. no smoking day etc.), a postgraduate programme around substance misuse might enable modification of modules to fit the undergraduate course or facilitate students taking a BSc - think laterally and be creative!

4. Consult	**Leadership, teamwork, talking and explaining, listening**

- *consultation helps you to receive feedback on your ideas and develop something more acceptable, it helps you be prepared for the implementation stage with few surprises*
- *be willing to compromise on details but not to compromise your overall vision*
- *you need to be sure of what you are trying to do so you can communicate it to others, develop different media for communication, these might include position papers, commentaries on external policy or strategy documents, speaking to committees, electronic communications or formal presentations. listen to people's ideas and suggestions, even if they are critical*
- *be patient, consultation takes time and effort, especially talking to people individually and directly, avoid writing or emailing without face to face communication on important matters as people can feel excluded, especially those you don't know very well*

5. Publicise widely	**Vision, presentation, amending proposals, communication**

- *be alert to how many and which people, groups and organisations might be affected by your plans and make arrangements to communicate with them*
- *publicity enables an altering of opinion and behaviour, raising awareness, an opportunity to communicate your vision*
- *use the guiding coalition to role model the change and lead by example (Kotter)*
- *depending on the scale of the change, publicity can involve many people and may include leaflets, putting articles in in-house newsletters, posters, meetings and web articles*
- *listen to and acknowledge feedback, you will win more hearts and minds that way, especially if you show that you are receptive and open to compromise and modification of your plans*

6. Agree detailed plans	**Produce plans**

- *this is a much tighter and less creative phase but 'the devil is in the detail' and it is important to work through all aspects and implications of the change you are planning, name individuals and spell out their roles, identify resource needs, etc.*
- *this is the start of the implementation phase and requires a critical mass of people/groups to carry through the change*

7. Implement	**Demonstration projects, have an implementation strategy, avoid scheming and bypassing key people**

- *if the preparation has been carried out carefully there should be a relatively smooth implementation*
- *the early implementation phase can be used to test out small aspects of the change, working with champions of the change and giving opportunities for demonstrating success – 'quick and visible wins' are important to highlight that the overall change process is valid and to reward and motivate those who have participated in the project*
- *Kotter suggests encouraging risk-taking and non-traditional ideas, activities and actions*
- *build in monitoring mechanisms to identify early any issues or objections that arise*

8. Provide support	**Overcome difficulties, encourage new behaviour, expect resistance, deal with objections**
○ *change champions need to provide active support for those involved in implementing the change, provide a forum for listening to their experiences and ensuring that people feel valued for the effort they are making* ○ *even small amounts of funding or resources can make a difference to helping people feel involved and rewarded (books or book tokens for students, acknowledgements on websites or articles, assistance with administrative activities etc.)* ○ *resistance will still be in place, work out strategies for overcoming this or limiting its effects* ○ *some people may raise objections once it becomes apparent what the actual implications are on their work or workload, work actively to address these, especially if they are widespread* ○ *keep a watchful eye on how the implementation phase is working, people can easily slip back into old ways of working until these have become the status quo* ○ *this is one of the most vulnerable stages of the project as the change is moving into being fully sustainable and requires goodwill and support from senior colleagues as well as those directly involved with implementing the change on a day to day basis*	
9. Modify plans	**Accommodate small alterations, compensate losers**
○ *you might find that, having implemented a change, it needs to be modified in some way* ○ *this might have resulted from people's feelings about the change (eg. they may feel side-lined or lacking expertise to deliver the teaching), practical difficulties (eg. some clinical attachments may not provide enough opportunities for dealing with patients who misuse substances or some new teaching/learning methods you have implemented might not be working because more staff development is needed* ○ *try to keep sight of the big picture and deal with the specific issues, unless the initiative has a major flaw in which case major redesign might be needed (note: if you've paid attention to the early development phase and consulted with the right people this shouldn't happen!)* ◦ *reinvigorate the change effort with more gains and wins, new projects themes and change agents (Kotter)*[42]	
10. Evaluate outcomes	**Needs met, benefits realised, modifications needed, evaluation strategy, problem solved**
○ *make sure that you have mechanisms in place to evaluate the change* ○ *these might be informal, verbal feedback from students or teachers for example, or more formal, such as questionnaires, surveys, interviews or focus groups as well as results of student assessments*	
And finally…. Anchor the new approaches in the culture ○ *embed the changes in the day to day practice of the school* ○ *look for ways to ensure leadership development and succession for when people move on* ○ *look for ways to ensure that substance misuse stays high on the curriculum and school agenda* ○ *seek out ways to be involved in national and local projects and committees* ○ *develop your expertise as a change agent for substance misuse in medical education*	

4.5 Monitoring and evaluation procedures

It is important to monitor and evaluate the learning activities or curriculum interventions to ensure that changes have been implemented.

Monitoring the changes allows for early identification of obstacles, organising help (or at least re-motivation) for those who may find alterations more difficult than expected and, when necessary, introducing modifications.

As outlined before, opportunities for curriculum improvements identified as a result of mapping need to be agreed in consultation to involve and harmonise with all taught subjects. However even when such agreement results in harmonised teaching it will not guarantee lasting changes unless it can be demonstrated that the new developments achieved intended objectives.

Even though the changes are aimed at optimisation, initially they are likely to involve extra effort in terms of organisation and delivery. It is important to provide a re-enforcement in a shape of internal audit results (as practiced by the medical school). This can be both formal and informal as either can provide a positive feedback to those involved and give them arguments they may find useful in discussing curricula of their respective specialities.

As Trowler [43] points out *'Resistances to and the failures of innovations can often be traced to the neglect of the links between the innovation and the organisation rather than the innovation per se'.* Therefore the progress and the final effects of the curriculum implementation must be documented according with the medical school standards (and using outcome measures valued by participating teachers) and related to the medical school overall aims. Seeking views and feedback from students on their experiences of substance misuse teaching will provide data and evidence about the impact of curriculum changes made, as well as contribute towards informing recommendations to changes in future substance misuse teaching.

Ideally the results of the monitoring and evaluation should guarantee that all involved will 'score' in the medical school overall assessment system. Preparing monitoring with this principle in mind will provide an on-going motivation for those involved and should make the audit process more bearable.

Progress testing (Oldham) [44] is a newer method of assessing developing learning of the type associated with substance misuse education.

SECTION 5: Appendices

Appendix 1 Mapping Matrix

The mapping matrix has been designed to map what is taught in the school curriculum against the learning outcomes identified by Corporate Curriculum in the national Substance Misuse Project. The matrix can be adapted to fit local needs

THE COURSE MAPPING MATRIX (GMC 2003 and 2009 equivalent outcomes)

COMPLETED BY: _____ DATE: _____

Substance misuse learning outcomes (SMLO)	**Year/semester/ taught**	**Session Title**	**Teaching methods**	**Hours**	**Learning aims/ Objectives**	**SMLO**	**How Assessed**	**Resources**
Bio-psycho-social models of addiction(4b:2003) (1.8:2009)								
Define **substance misuse, dependence and addictive behaviour** and distinguish between acceptable and problematic use								
Demonstrate awareness of the range of substances that can be misused, the different **types and classes of addictive substances**, their alternative and colloquial names and their effects								
Demonstrate awareness of the psychological, social, biological and genetic **causes of dependence and addiction**, the interactions between such factors in the individual and the different **models** used to describe addiction								

Describe the absorption, distribution, excretion and metabolism of **drugs of addiction**								
Describe the **physical effects** of addiction, including the key effects of drug addiction on neurotransmitter systems, mechanisms of drug tolerance and the physiological effects of withdrawal								
Describe the health effects of drugs, smoking and alcohol.								
Professionalism and Self-Care (4a(i),4d,10,:2003) (3.20a,21e,23j:2009)								
Demonstrate a **professional attitude** towards substance misusers which incorporates a non-judgemental approach and respect for a patient's autonomy								
Describe the **risk factors** for substance misuse in themselves, in medical students and in healthcare workers								
Describe the **sources of help** for students and doctors with drug and alcohol related problems								
Describe how substance misuse problems may affect a **healthcare professional's** judgement, performance and care of their patients								
Describe the need to balance due concern for the health of a colleague with responsibilities for the **safety and welfare of patients**								
Outline the role of the GMC and medical schools in ensuring students and doctors' **fitness to practice**								
Describe the problems associated with self-medication								

Clinical Assessment of Patients (4a(iii),4c,6b,6c:2003) (3.23(d), 2.18, 2.15:2009)								
List the major **clinical features** of alcohol and drug dependence, and tobacco use.								
Describe the range of **clinical outcomes of addiction** and discuss the prognosis and management								
Take a focussed drug and alcohol **history**								
Elicit signs of alcohol or drug misuse through **physical and mental state examinations** and identify and prioritise medical and psychosocial problems associated with substance misuse								
Demonstrate appropriate skills for communicating sensitively with patients about substance misuse issues and for **dealing with difficult, aggressive or intoxicated patients**, balancing assessment need with their own safety and that of others								
Appropriately order and interpret urine and blood **screening tests** for drugs of addiction, use standardised **screening and assessment instruments** to detect alcohol and drug levels and describe other special investigations and how to interpret results								
To understand the principles of motivational interviewing and psychological assessment in relation to a patient's readiness to implement change								

Treatment Interventions (4b, 7a:2003) (1.8, 3.22(a):2009)								
Describe the **basic treatment regimes** for various addictions and withdrawal states								
Describe the basis of **commonly used therapies** for addiction, such as Brief Intervention therapy								
Describe the variety of UK agencies to which patients with addiction problems can be referred and how and where to make appropriate **referrals for treatment**								
Demonstrate an understanding of the principles of rational prescribing and the use of psycho-active medication and its associated risks, such as iatrogenic addiction								
Advise a patient on **risk-reduction strategies** for drug use								
Demonstrate awareness of risk related to **needle use and disposal** for healthcare workers and patients								
Advise a patient appropriately on **reducing or abstaining from drinking and smoking** and implement a treatment plan with the patient								
Advise addicted women on how to stabilise/discontinue substance use to minimise impact on **foetal and maternal health**								
Demonstrate awareness of the need to assess patients' **capacity to consent** to treatment								
Describe the impact of substance misuse on **concordance with treatment** including Discharge Against Medical Advice and drug interactions								

Epidemiology, Public Health and Society (4a[ii, iii], 4b, 5c, 6c) (1.11, 3.23(d), 1.8,3.21(c):2009)								
Describe UK **policies** on drug use, drug dispensing and prescribing and on alcohol and smoking								
Describe UK **legislation** controlling drugs, alcohol and tobacco, including the legal limits for alcohol and driving and the recommended maximum limits for alcohol consumption								
Describe UK public health **strategies** for the prevention of drug misuse, smoking and misuse of alcohol								
Be aware of international **policies and strategies** to limit drug supply and demand								
Describe the **epidemiology** of alcohol consumption, smoking, drug misuse in the general population and specifically in doctors and other health care professionals								
Demonstrate awareness of the risks in different **work environments** and the need for employers to have drug and alcohol **policies**								
Describe the **effects of addiction** on individuals, their families, friends and colleagues in a range of age-groups; from children and adolescents to older people								
Describe the long-term **social consequences** of various types of addiction and substance misuse, including the economic consequences and the links between crime and substance misuse								
Describe the risks to the children of addicted parents including **child protection policies** and a doctor's duty to implement these								

Specific Disease and specialty topics (4b:2003) (1.8:2009)								
Recognise life-threatening complications of substance misuse, including septicaemia, pulmonary emboli and overdose and be able to carry out appropriate interventions								
Describe and explain the links between substance misuse and: Accidents Lung disease, specifically smoking Anxiety, depression, dementia, schizophrenia Acute psychotic episodes Self-harm and suicide Heart disease and hypertension Liver disease, pancreatitis and gastritis Infectious diseases, Inc. HIV and hepatitis B and C virus infections Cancers Sleep disorders Weight problems Pain management								
Show awareness of substance misuse in the aetiology of neurological conditions including seizures, par aesthesia and stroke								
Describe the effects of drug and alcohol-use and smoking on pregnancy								

Appendix 2 Designing assessments and course development proforma

This pro forma (Appendix 2) provides a means for course developers to gather and collate information needed for course planning into one document. It comprises a number of questions which need to be answered and categorised under key headings. Once the pro forma is completed, it can be used to form the basis of course handbooks or submission documentation for validation or approval.

CURRICULUM DEVELOPMENT PROFORMA

Course working title

Course co-coordinators

Teaching team

Target group/audience:
What group of learners will benefit from the course?
Will any other group of learners be able to benefit from the course?

Course rationale:
Why is there a need to develop this course?
What is the overall educational philosophy of the course?

Aim of the course (based on training needs analysis):
What are the main goals of the course?
What will the course provide for learners and other stakeholders?

Learning outcomes/objectives:
What will the learners be able to do on completion of the course?

Course structure
Description of main features eg. how many years/terms/sessions, course map and timetable, teachers, prerequisite teaching/learning

Content (syllabus)
List the content topics to be covered and note the depth of coverage or emphasis

Teaching and learning methods:
How can the learning outcomes best be achieved?
How is the content of the course to be presented to the learners?
Identify delivery methods, instructional materials and application of IT and other media.

Assessment strategy and methods:
How will you ensure and measure that learning outcomes have been achieved by the learners?

What are the most appropriate methods and timing of assessments (formative, summative, types of assessment, end stage etc.)?
Include major assessments on course map

Learning resources:
Indicate the support materials and other resources that will be required eg. IT support, library stock (books, journals, CDROMS, Podcasts etc.),Virtual patients, teaching staff

Can any existing materials or resources be utilised for this course?

Staff development/ training needs:
Indicate any staff development needs that may arise as a result of the new course eg. new teaching methods being introduced, use of IT etc.

Evaluation methods:
How will achievement of the course aims be measured and how will you know when you have succeeded in delivering a course that is 'successful'?

This section might include details of validation/ approval mechanisms

Additional comments:
This section might include mode of dissemination of good practice, details of piloting, pre-testing or field trials, time line for the project etc.

Designing Assessment Proforma

Assessing Substance Misuse Learning

This brief section is intended for teachers to refer to when developing student assessments in substance misuse, from developing entire exams to writing individual questions. It is set out in the form of a brief checklist of things to consider

While the agreed content has been provided by the Corporate Curriculum in Substance Misuse specific terms of assessment must reflect those broadly adopted by the Medical School. In order for a successful implementation the substance misuse subjects must be assessed in the same way, and with the same recognition, as in all other sections of the medical curriculum.

As a practical aid to those involved in designing new, or enriching existing, examinations and other modes of assessment, the table below presents a summary of steps and factors to be considered while working on these tasks.

1.	**Purpose** Being clear about the purpose of an assessment is vital to every other consideration.
1.1	***Is the assessment primarily:*** ***(a) to give students feedback on how they're doing (formative);*** ***(b) to measure what students have learned (summative).*** While summative assessments (those used to decide on progress through a course) can also provide feedback to students on how they're doing (formative), it is important that students have purely formative assessments that don't count towards progress. Bear in mind, however, that very often it is the summative assessments which drive student learning!
1.2	***What are you assessing, and to what level?*** ***(a) underlying knowledge and understanding.*** ***(b) skills and competencies.*** ***(c) professional attitudes and behaviours.*** This will depend upon the stage of the course you are assessing, and you should use Miller's pyramid model of competence to decide this: you may expect the learner just to show that he or she 'knows' (a knowledge-based exam); beyond this you may expect 'knows how' (a theoretical test of what to do); then 'shows how' (a practical, often simulated test of skills); and finally 'does' (an observation of actual performance, often in the workplace). Be clear about the level of knowledge, skills, competencies or behaviours you are requiring: is it that appropriate of 4th year students or newly-qualified doctors?

1.3	***Should your assessment be:*** ***(a) Criterion-referenced?*** ***(b) Norm-referenced?*** Most assessment of students' learning in a course would be criterion-referenced, where you measure the student's ability against pre-defined standards – a pass mark. Theoretically, all students could pass. Sometimes norm-referenced assessment is appropriate, however, where you don't have a standard or pass mark but wish to rank the students (eg for a prize exam or where places on a course are limited).
2.	**Validity** The assessment should achieve what it sets out to do (validity), and to do this, the content and the method(s) used have to be checked – always bearing in mind the purpose and level of the assessment. Validity, in part, depends upon reliability (see 3): In order to be valid, an assessment must be reliable. Reliability on its own, however, does not imply validity.
2.1	*Content validity:* ***Is what you're assessing taught in the curriculum?*** ***Does it cover the necessary content?*** Be careful not to include in assessments things which are not taught in the curriculum. Always start with the stated learning objectives for the course. Bear in mind that what you do not test will eventually be ignored by students. You do not have to cover everything in all tests, but you should construct your tests so that eventually everything is covered. This process is called 'blueprinting'. See also 3.1, 'sample size'.
2.2	*Construct validity:* ***Does the assessment actually measure what you are testing?*** A test should employ methods which have been shown to measure the type of aptitude, knowledge or skill you are assessing. This is a matter of: (a) choosing appropriate methods and number of questions or overall testing time by referring to evidence elsewhere (eg a recent textbook on the subject or a respected website or a search of research literature) (v) analysing the results of your assessment to see if there is evidence of internal consistency and reliability (see below).
2.3	*Consequential validity:* ***Will the assessment you are using have a beneficial effect on learning?*** The aim of assessment is to ensure learning. Be careful that the type or length of test you use does not skew how students will approach their learning. If you only test facts and not understanding, students will learn only facts. If you assess too little (under-sampling) students may risk not learning important things, but if you over-assess, you may increase anxiety and stifle curiosity.

4.	**Methods of Assessment** Choose appropriate assessment methods (if you have the choice), according to whether you are testing knowledge, understanding, skills, attitudes.
4.1	***What types of test are appropriate?*** Multiple Choice Questions (MCQs) with definitely right/wrong answers are used for testing items of knowledge. Extended Matching Questions (EMQs) test knowledge but allow for degrees of 'rightness' and usually test in greater depth in one area. Single Best Answer Questions (SBAQs) are designed to eliminate technical flaws, often found in other MCQs, providing advantages to "test-wise" examinees Modified Essay Questions (MEQs) can test knowledge and understanding in a structured series of questions, often based on a case scenario. Portfolios or Reflective Diaries can document experience and reflection upon it. Objective Structured Clinical Examinations (OSCEs) test skills in a simulated environment. The Objective Structured Long Examination Record (OSLER) provides a structured methodology for clinical examination and history-taking. A Mini-Clinical Evaluation Exercise (Mini-CEX) records an actual clinical encounter. These are examples of the most often used methods and there are numerous others. Generally, however, be wary of using methods which are liable to vary from candidate to candidate or marker to marker: for example, a traditional long-case examination using many different patients is very hard to standardise. It is also hard to ensure markers use the same marking criteria for unstructured long essays. Traditional oral examinations are perhaps the least reliable method of assessment as the examiners can ask anything to any standard.
5.	**Marking criteria and standard-setting** Every test question or exercise should have either defined correct answers and/or what criteria will be used in assessing students' answers. Assuming you are using a criterion-referenced assessment (see 1.3), the standard you set as 'acceptable' or 'pass' also has to be defined.
5.1	***What are the marking criteria?*** More than one examiner should set and check every question. MCQs: check that the correct answer is unambiguously true – and that the incorrect ones are definitely not true. (Ensuring this is one of the pitfalls of MCQs.) EMQs: determine the best answer and ensure it is sufficiently better than the next-best – or allow more than one answer to score, perhaps with varying marks. MEQs: write model answers and agree marks and general criteria for judging answers. Portfolios etc.: write general criteria covering content and presentation. OSCE, Mini-CEX, and OSLER: have clear criteria and allocate marks to each.

5.2	***What is the pass mark?*** This will depend upon the purpose and level of the assessment, but it should not really just be an arbitrary percentage mark: if you want to determine whether a student can do a 10-step procedure safely, you don't just accept a mark of 50% or even 60% as proving this - you might expect the student to do all 10 steps flawlessly. There are several established methods for setting standards in assessments which are aimed at showing competence. All use a combination of agreement among experts about the standard required and then a simple mathematical formula to arrive at the pass mark for the examination. Norcini JJ.(2003)[45] describes these The Angoff method The Contrasting Groups method Hofstee method
6.	**Reliability** The assessment should be a reliable measure – the results should be reproducible. If an assessment is not reliable its validity is called into question, regardless of how appropriate the method may appear to be. Beware, however, that the opposite is not true: a reliable assessment doesn't ensure validity on its own – measuring a student's knowledge of a procedure accurately won't tell you if they can actually do it. In practice validity and reliability are often in tension: it may be very difficult to prove the reliability of an assessment which is complex and 'real', because of that very complexity. Nevertheless, there are several aspects of reliability which you should consider and gather statistical data about when planning and running your assessments.
6.1	*Sample size:* ***Have you included enough questions?*** Too small a sample of questions won't give you a reliable test – a candidate's performance might just be fluke. Ideally, you should have about an hour of knowledge-based test items in an exam, and at least 10 stations in an OSCE. However, when writing items on a specific subject like substance misuse towards a larger exam, you'll have to accept that you won't have this luxury just for your own subject: but do ensure that you have a large bank of questions that cover the syllabus and can be rotated.
6.2	*Inter-rater reliability:* ***Are the markers marking consistently?*** Ideally, the same answer should be given the same mark by any marker. Check the consistency of marks between markers, and arrange for at least some questions to be marked by someone else – often an External Examiner – as a process of 'moderation'.

6.3	*Intra-test reliability*: ***Are the results internally consistent?*** A reliable test will have reasonable correlations between scores for different questions, providing the questions are testing the same sort of thing.
6.4	*Test/Re-test reliability*: The test results should be reproducible on another occasion. Usually this is almost impossible to show, as candidates would have to sit the same test again. You can, however, look at results of different cohorts sitting the same or similar tests.
7.	**Other issues**
7.1	*Culture sensitivity:* ***Is your test fair?*** It is easy to include in assessments assumptions which might disadvantage certain cultural groups which are not relevant to what you are testing. For example, is what you expect in a test of communication skills influenced more by how you are used to western students behaving rather than what is actually required?
7.2	*Generalisability:* ***What are you deducing from your assessments?*** Research into the assessment of competence indicates that competence is case-specific, rather than there being any generic notion of clinical competence. The context of what you are assessing should therefore be considered carefully in deducing the meaning of how a student performs.

Appendix 3: Core learning on clinical attachments: Fast Fact Sheets

The fact sheets were prepared and reviewed by experts with in-depth knowledge of both substance misuse and the relevant clinical specialty. They identify a minimum set of learning objectives relevant to both substance misuse and enable the identification for demonstrating common themes and requirements thus creating basis for harmonisation between the speciality and substance misuse. The fact sheets can be further adapted to fit with the style used in a given medical school and are for use in teaching and can be placed on virtual learning environments as a resource for students.

TITLES
Fast Facts 1: Alcohol Withdrawal
Fast Facts 2: Drug Misuse in Emergency Medicine
Fast Facts 3: Emerging Substances
Fast Facts 4: Palliative Care and Substance Misuse
Fast Facts 5: Public Health and Addictions
Fast Facts 6: Substance Misuse in Anaesthesia
Fast Facts 7: Substance Misuse and Doctors' Own Health
Fast Facts 8: Substance Misuse in Surgery
Fast Facts 9: Substance Misuse Young People
Fast Facts 10: Substance Misuse and Communication
Fast Facts 11: Alcohol Misuse in Emergency Medicine
Fast Facts 12: Substance Misuse in Gastroenterology
Fast Facts 13: Substance Misuse in General Practice
Fast Facts 14: Substance Misuse in Geriatrics
Fast Facts 15: Substance Misuse and Infectious Diseases
Fast Facts 16: Substance Misuse in Pregnancy
Fast Facts 17: Substance Misuse in Neurology
Fast Facts 18: Pharmacology of Addiction Treatments
Fast Facts 19: Substance Misuse in Psychiatry
Fast Facts 20: Substance Misuse and Systems

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Addiction Information Teaching and Learning Resources

Recommended key texts, articles, journals, and online resources from reading lists from medical schools, academic champions, and coordinators reports

BOOKS & REPORTS	**Content**
al'Absi, M.(2007) Stress and addiction: biological and psychological mechanisms, Elsevier	Addiction
Alcohol and Drugs ; Pocket guide http://www.beds.ac.uk/goldbergcentre/resources	Alcohol ; Drugs
AUDIT - Alcohol Use Disorders Identification Test http://www.alcohollearningcentre.org.uk/Topics/Browse/BriefAdvice/?parent=4444&child=4896	Alcohol
Babor, T. et al (2010) Alcohol: No Ordinary Commodity; research and public policy, 2nd ed. Oxford; Oxford University Press,	Alcohol
Baker, A., Velleman, R. (2007) Clinical handbook of co-existing mental health and drug and alcohol problems, Routledge	Alcohol; Drugs
Barnard, M.(2007)Drug addiction and families, London Jessica Kingsley	Drugs
Barrie K. (2011) Alcohol. Dunedin Academic Press. www.dunedinacademicpress.co.uk/	Alcohol
Birdwell J., Chapman J., Singleton N., (2011) Demos and UK Drug Policy Commission Report on Legal Highs http://www.demos.co.uk/publications/taking-drugs-seriously	Drugs
CAGE Questionnaire -patient questionnaire is a screening test for problem drinking and potential alcohol problems. http://www.patient.co.uk/doctor/CAGE-Questionnaire.htm	Alcohol
The Centre for Public Health, Faculty of Health & Applied Social Science, Liverpool John Moore's University,(2011) A summary of the health harms of drugs: A reference document summarising, for a non-medical audience, the latest scientific> evidence about the health-related harms of emerging and established licit and illicit drugs commonly used in the UK, London NTA/DH http://www.nta.nhs.uk/uploads/healthharmsfinal-v1.pdf	Drugs
Crome I., Ghodse H., E Gilvarry, & McArdle P (2004) Young people and substance misuse London Gaskell (Royal College of Psychiatrists)	Alcohol; Drugs; Tobacco
Davies JB (1997) The Myth of Addiction (2nd edition), Harwood Academic Publishers,	Alcohol; Drugs
Day E (2007) Clinical Topics in Addiction. Royal College of Psychiatrists	Drugs
Department of Health (2010) A Smokefree Future. A comprehensive tobacco control strategy for England. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_111749	Tobacco
Department of Health (2007)Drug misuse and dependence: guidelines on clinical management \report of a Medical Working Group: http://www.nta.nhs.uk/publications.aspx?page=3&category=Drug+treatment+guidance&section	Drugs
Donaldson, Sir L (2009). The Chief Medical Officer's Annual Report 2008. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/AnnualReports/DH_096206	Alcohol
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Finnegan L., Kandall S., (2010) Women, children and addiction This book was published in a special issue of the Journal of Addictive Diseases, v. 29, no. 2, 2010. Taylor & Francis, http://www.routledge.com/books/details/9780415601030/	Drugs
Frances RJ, Miller SI, Mack AH. (2011) Clinical textbook of addictive disorders - Guilford, 3rd ed, http://www.guilford.com/cgi-bin/cartscript.cgi?page=pr/frances.htm&dir=pp/addictions&cart_id=12687.16301	Alcohol
Fitzgerald, H. E., Lester, B. M., and Zuckerman, B. S.(2000) Children of addiction: research, health and public policy issues .Routledge	Alcohol; Drugs
General Medical Council (2009) Medical Students: Professional Values and Fitness to Practise http://www.gmc-uk.org/education/undergraduate/professional_behaviour.asp (PDF) and accompanying Interactive Guide Medical students: Professional Values in Action comprising fictional case studies which aim to put the guidance booklet in context. http://www.gmc-uk.org/static/media/Medical_Students/index.html	Professional Practice
Gerada, C., (2005) RCGP guide to the management of substance misuse in primary care. London Royal College of General Practitioners	Alcohol; Drugs; Tobacco

BOOKS & REPORTS	Content
Ghodse AH (2008) International Drug Control into the 21st Century, Aldershot. Ashgate Publishing	Alcohol; Drugs; Tobacco
Ghodse AH (2010) Drugs and Addictive Behaviour: A Guide to Treatment, 4th ed. Oxford Blackwell Science	Alcohol; Drugs; Tobacco
Ghodse AH, Hermann H., Maj. M., Sartorius N. (2011) Substance Abuse Disorders – Evidence and Experience. Wiley- Blackwell	Alcohol; Drugs; Tobacco
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Heather N & Robertson I (1997) Problem Drinking,3rd ed. Oxford University Press,	Alcohol
Heather N & Stockwell T (2004) The Essential Handbook of Treatment and Prevention of Alcohol Problems, John Wiley & Sons	Alcohol
HIT The Safer Injecting Handbook 7th ed http://www.exchangesupplies.org/shopdisp_P303.php	Drugs
Jarvis TJ, Tebbutt J, & Mattick RP., Shand F (2005) Treatment Approaches for Alcohol & Drug Dependence: An Introductory Guide John Wiley & Sons	Alcohol; Drugs
Lloyd, C. (2010). Sinning and Sinned Against: The Stigmatisation of Problem Drug Users. London: UK Drug Policy Commission. http://www.ukdpc.org.uk/resources/Stigma_Expert_Commentary_final2.pdf	Drugs
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Marshall E , Humphreys K, Ball D, Cook C, & Edwards G. (2010) The treatment of drinking problems : a guide for the helping professions: Cambridge University Press	Alcohol
Masters A (2005) Stuart: A Life Backwards, Fourth Estate	Drugs
Monti PM, et al(2002)Treating Alcohol Dependence: A Coping Skills Training Guide,2nd ed. Guilford Press	Alcohol
Morgan M. Y., Ritson B (2010) Alcohol and health: a handbook for practitioners : London: The Medical Council on Alcohol, http://www.m-c-a.org.uk/publications/handbook	Alcohol
Moss AC., Dyer KR., (2010) Psychology of Addictive Behaviour. Palgrave Macmillan	Addiction
The NHS Information Centre, Lifestyles Statistics. Smoking Statistics UK 2010 http://www.ic.nhs.uk/pubs/smoking10	Tobacco
National Addiction Centre (2011) Benzodiazepines, z-drugs and codeine products http://www.kcl.ac.uk/iop/depts/addictions/research/drugs/benzodiazepinesz-drugsandcodeineproducts.aspx	Drugs
National Institute for Health and Clinical Evidence (2011)Alcohol use disorders: diagnosis, assessment and management of harmful drinking and alcohol dependence NICE public health guidance 115 http://guidance.nice.org.uk/CG115	Alcohol
National Institute for Health and Clinical Evidence (2010) Alcohol-use disorders: preventing the development of hazardous and harmful drinking. NICE public health guidance 24 http://guidance.nice.org.uk/PH24	Alcohol
National Institute for Health and Clinical Evidence (2010) Alcohol-use disorders: diagnosis and clinical management of alcohol-related physical complications. NICE clinical guideline 100 http://guidance.nice.org.uk/CG100	Alcohol
National Treatment Centre Addiction to medicine: an investigation into the configuration and commissioning of treatment services to support those who develop problems with prescription-only or over-the-counter medicine. http://www.dh.gov.uk/en/MediaCentre/Pressreleases/DH_126674	Drugs
Paton A, Touquet R (eds) (2005)'Problems in accident and emergency departments' pp 22-25; Surgical problems' pp 30-34: in ABC of Alcohol. 4th ed. Oxford: Blackwell Publishing.	Alcohol
Petersen T & McBride A(2002) Working With Substance Misusers, Routledge,	Alcohol; Drugs
Raistrick D, Hodgson R, & Ritson R (1999) Tackling Alcohol Together: The Evidence Base for a UK Alcohol Policy, Free Association Books	Alcohol
Raistrick, D., Heather N., Godfrey C.,(2007) National Treatment Agency Review of the effectiveness of treatment for alcohol problems http://www.nta.nhs.uk/publications.aspx?category=Alcohol	Alcohol
Rassool GH. (2009)Alcohol and Drug Misuse: A Handbook for Students and Health Professionals, Routledge http://www.ebookstore.tandf.co.uk/html/moreinfo.asp?etailerid=0&isbn=9780203871171	Alcohol; Drugs
Rassool GH. (2010) Addictions for Nurses, Wiley-Blackwell	Alcohol; Drugs;

BOOKS & REPORTS	Content
	Tobacco
Rassool GH (2006) Dual diagnosis nursing, Blackwell	Alcohol; Drugs, Tobacco
Reducing demand, restricting supply, building recovery: supporting people to live a 'drug-free life 'drug strategy 2010 http://www.homeoffice.gov.uk/publications/alcohol-drugs/drugs/drug-strategy/drug-strategy-2010	Drugs
Reuter P., Stevens A., (2007) An analysis of UK Drug Policy, United Kingdom Drug Policy Commission. http://www.ukdpc.org.uk/reports.shtml	Drugs
Royal College of Obstetricians and Gynaecologists (2006) Alcohol consumption and the outcomes of pregnancy RCOG Statement No 5 http://www.rcog.org.uk/womens-health/clinical-guidance/alcohol-consumption-and-outcomes-pregnancy	Alcohol
Robson P.(2009) Forbidden Drugs 3rd Ed, Oxford University Press	Alcohol; Drugs; Tobacco
Royal College of Psychiatrists and Physicians Drugs: Dilemmas and Choices**,** Gaskell, 2000 http://www.myilibrary.com?id=75467&Ref=Athens	Drugs
Sayette MA & Hufford MR (1997). Alcohol abuse / alcoholism. (pp 347-50) In: Baum A et al (eds). Cambridge handbook of psychology, health and medicine. Cambridge University Press	Alcohol
Seivewright N. (2009) Community Treatment of Drug Misuse: More Than Methadone 2nd ed, Cambridge University Press	Drugs
Shapiro, H. (2010). The Essential Guide to Drugs and Alcohol (14th ed). London: DrugScope	Alcohol ; Drugs
Smith, D. E., and Seymour, R. B. (2001) Clinicians Guide to Substance Abuse. McGraw Hill	Alcohol; Drugs; Tobacco
Simpson D. (2000) Doctors and Tobacco: Medicine's Big Challenge. Tobacco Control Resource Centre - British Medical Association	Tobacco
Stark, M. J., Payne-James, J. (2003) Symptoms and Signs of Substance Misuse. Greenwich Medical Media Ltd	Alcohol; Drugs; Tobacco
Statistics on Alcohol 2010 http://www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles/alcohol/statistics-on-alcohol-england-2010	Alcohol
Stockwell T, Gruenewald PJ, Toumbourou JW, & Loxley W (2005) Preventing Harmful Substance Use, John Wiley & Sons Ltd	Drugs
Teesson, M, Degenhardt, L., & Hall, W. (2002) Addictions. Hove, Psychology Press	Alcohol; Drugs; Tobacco
Tober G & Strang J (2003) Methadone Matters: Evolving Community Methadone Treatment of Opiate Addiction, London, Martin Dunitz Publishing	Drugs
Touquet R., (2011) Paddington Alcohol Test http://www.alcohollearningcentre.org.uk/Topics/Browse/Hospitals/EmergencyMedicine/?parent=5168&child=5169	Alcohol
Waller T & Rumball D (2004) Treating drinkers and drug users in the community; Oxford Blackwell	Alcohol; Drugs
Ward J, Mattick RP, & Hall W (1997) Methadone Maintenance Treatment and Other Opioid Replacement Therapies, Taylor and Francis	Drugs
Watson, R. R., and Myers, A. K. (2002) Alcohol and heart disease. Taylor and Francis	Alcohol
West R (2006) Theory of Addiction, Blackwell Publishing	Addiction
Whittaker, A (2010) The Essential Guide to Problem Substance Use During Pregnancy, Drugscope	Drugs
Winyard R. (2005) Substance Misuse in Primary Care: A Multi-Disciplinary Approach. Radcliffe Publishing	Alcohol; Drugs
United Kingdom Drug Policy Commission(2010) Getting serious about stigma: the problem with stigmatising drug users www.ukdpc.org.uk/publications.shtml#Stigma_reports	Drugs
United Kingdom Drug Policy Commission(2010) Drugs and Diversity, UKDPC http://www.ukdpc.org.uk/reports.shtml	Drugs
United Kingdom Drug Policy Commission (2010 Representation of Drug use and Drug users in the British Press a content analysis of newspaper coverage. UKDPC http://www.ukdpc.org.uk/publications.shtml#Stigma_reports	Drugs

BOOKS & REPORTS	**Content**
World Health Organisation (2009) The WHO Report on the Global Tobacco Epidemic http://www.who.int/tobacco/mpower/2009/ebook/en/index.html	Tobacco
Royal College of Physicians of London Tobacco Advisory Group (2008) Ending tobacco smoking in Britain Radical strategies for prevention and harm reduction in nicotine addiction http://bookshop.rcplondon.ac.uk/details.aspx?e=259	Tobacco
Royal College of Physicians of London Tobacco Advisory Group (2010) Passive smoking and children http://bookshop.rcplondon.ac.uk/details.aspx?e=305	Tobacco
Stannard C (2007), Risk of addiction to opioids prescribed for pain relief Response on behalf of the British Pain Society to All Party Parliamentary Group on Drug Misuse Inquiry http://www.britishpainsociety.org/APPG_report.pdf	Drugs
Seppala MD., Rose, M (2010) Prescription pain killers. History, pharmacology and treatment, Hazelden	Drugs
Verster JC, Bardy K., Galanter M., Conrod P. (2010) Drug abuse and addiction in medical illness. Causes, consequences, and treatment, Humana Press.	Drugs
ARTICLES	
Alcohol 44 (7-8) November / December 2010 (Special issue on foetal alcohol spectrum disorders: diagnosis & intervention) http://www.alcoholjournal.org/issues http://health.groups.yahoo.com/group/fasdnews/message/6641	Alcohol
Benowitz NL. (2009) Pharmacology of nicotine: addiction, smoking-induced disease, and therapeutics. Annu Rev Pharmacol Toxicol; 49:57-71.	Tobacco
Bohnert, A. SB et al (2011) Association Between Opioid Prescribing Patterns and Opioid Overdose-Related Deaths JAMA 305(13):1315-1321. doi: 10.1001/jama.2011.370	Drugs
Connors, K; Connors, K; Bernstein, H;(2009) Innovative online smoking prevention education for pediatric providers, 'tween' girls, and their families Journal of Communication In Healthcare, 3,(1), pp. 9-16	Tobacco
Crombie IK et al. (2007). How do public health policies tackle alcohol-related harm: a review of 12 developed countries. Alcohol and Alcoholism 42 (5): 492-499. doi: 10.1093/alcalc/agm001	Alcohol
Dale R, Barton R (1997). Ethical debate: why are doctors ambivalent about patients who misuse alcohol? *BMJ*; 315: 1297-1298.	Alcohol
Dani JA., Balfour D JK (2011) Historical and current perspective on tobacco use and nicotine addiction, Trends in Neurosciences, 34, (7), 383-392	Tobacco
Ferner RE, Chambers J. (2001). Alcohol intake: measure for measure. *BMJ* 323: 1439-1440.	Alcohol
Fiellin DA *et al.* (2000). Outpatient Management of Patients with Alcohol Problems. *Ann Intern Med* 133: 815-827.	Alcohol
Gilmore I (2010) Alcohol Misuse and its Consequences – An Overview and a European Perspective. European Review, 18: 47-56.	Alcohol
Gilmore IT (2007). What lessons can be learned from alcohol control for combating the growing prevalence of obesity? *Obesity Reviews* 8 (s1), 157–160.	Alcohol
Gilmore IT, Sheron N (2008). Reducing the harms of alcohol in the UK. *BMJ* 335; 1271-2.	Alcohol
Hughes K *et al.* (1997). "Young people, alcohol, and designer drinks: quantitative and qualitative study". *BMJ* 314: 414-418.	Alcohol
Kumar Das S *et al.* (2003). Biochemical markers for alcohol consumption. *Ind.J.Clin.Biochem.* 18 (2) 111-118.	Alcohol
Lakhani N (1997). Alcohol use amongst community-dwelling elderly people: a review of the literature. *J. Adv. Nursing* 25(6): 1227-32	Alcohol
The Lancet series on Addictions – Addiction a global problem with no solution Lancet Vol 379, Issue 9810 Jan 2012 http://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2812%2960003-8/fulltext	Addiction
Makela P *et al*. (1997). Contribution of deaths related to alcohol use to socioeconomic variation in mortality: register based follow up study. *BMJ* 315: 211-216.	Alcohol
Marshall EJ *et al.* (2009). *Introduction to a special issue on Alcohol Related Brain Damage*. The Seven Ages of Man ... (or Woman). *Alcohol & Alcoholism* Vol. 44 (2), 106–107.	Alcohol
McKeganey N *et al.* (1996). "Designer drinks and drunkenness amongst a sample of Scottish schoolchildren". *BMJ* 313: 401.	Alcohol
Miller P & Plant M (1996). "Drinking, smoking, and illicit drug use among 15 and 16 years olds in the United Kingdom". *BMJ* 313: 394-397.	Alcohol; Drugs; Tobacco
Moriarty KJ *et al.* (2007). Collaborative care for alcohol-related liver disease. *Clin. Med.* 7(2): 125-128.	Alcohol
Musto, DF (1985) Iatrogenic Addiction: the problem, its definition and history, Vol. 61, No. 8, Bulletin New York academy of Medicine http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1911869/pdf/bullnyacadmed00064-0008.pdf	Drugs
Öberg M., Jaakkola, MS., Woodward A Peruga, A ., Prüss-Ustün (2010) A Worldwide burden of disease from exposure to second-hand	Tobacco

BOOKS & REPORTS	Content
smoke: a retrospective analysis of data from 192 countries. Lancet Online DOI:10.1016/S0140-6736(10)61388-8	
O'Connor PG, Schottenfeld RS (1998). Patients with Alcohol Problems. *New Engl. J. Med.* 338: 592-602.	Alcohol
Paton A (2005). Alcohol in the body. *BMJ.* 330(7482):85-7	Alcohol
Plant M *et al*. (2000). Life stage, alcohol consumption patterns, alcohol-related consequences, and gender. *Substance Abuse* 21: 265-281.	Alcohol
Plant M (2004). The alcohol harm reduction strategy for England. *BMJ*. 328:905-6.	Alcohol
Room R *et al.* (2005). Alcohol and public health. *Lancet* 365(9458):519-30	Alcohol
Royal College of Physicians. Alcohol- can the NHS afford it? *www.rcplondon.ac.uk/pubs/books/ActNHSai/index.asp*	Alcohol
Saitz R (2005). Unhealthy Alcohol Use. *New Engl J Med.* 352(6):596-607.	Alcohol
Thun MJ *et al.* (1997) Alcohol consumption and mortality among middle-aged and elderly US adults. *New Engl. J. Med.* 337:1705-14.	Alcohol
Watkins, S.S., et al., (2000). Neural mechanisms underlying nicotine addiction: Acute positive reinforcement and withdrawal. Nicotine & Tobacco Research 2(1):19–37.	Tobacco
Webb E et al. (1996). Alcohol and drug use in UK university students. Lancet, 348 (9032): 922-5	Alcohol
Zilberman M *et al.* (2003). Gender similarities and differences: the prevalence and course of alcohol and other substance related disorders. *Journal of Addictive Diseases*. 22(4): 61-74.	Alcohol; Drugs

WEBSITES, E-LEARNING, ONLINE RESOURCES and VIDEOS	URL
Addaction a UK drug and alcohol treatment charity	www.addaction.org.uk
Addiction Education – addiction resources, research, films, treatment and drug information.	http://www.addictioneducation.co.uk/
Addiction Treatment Forum substance abuse news of interest to opioid treatment programs and patients in methadone maintenance treatment.	http://atforum.com/
Addiction Recovery Foundation - a UK charity dealing with addictions and dependencies	www.addictiontoday.org
Al-Anon help for the families and friends of problem drinkers	www.al-anonuk.org.uk
Alcoholics Anonymous advice, help and access to information about local AA groups	http://www.alcoholics-anonymous.org.uk/
Alcohol Concern exists to reduce the negative impact alcohol can have on communities, families and individuals.	www.alcoholconcern.org.uk
Alcohol, Other Drugs, and Health: Current Evidence **-** clinically relevant research on alcohol, illicit drugs, and health	http://www.bu.edu/aodhealth/index.html?0078c380

Alcohol Learning Centre –online resources and training on alcohol issues and brief interventions	http://www.alcohollearningcentre.org.uk/eLearning/
Almost a doctor revision notes for medical students	http://almostadoctor.co.uk/content/systems/neurology-psychiatry/psychiatry/drug-and-alcohol-abuse
ASH (Action on Smoking) public health charity that works to eliminate the harm caused by tobacco.	http://www.ash.org.uk/home
The Brief Addiction Science Information Source (BASIS) information related to addiction, and public access to the latest scientific developments and resources in the field.	http://www.basisonline.org/about_the_basis.html
BMA Counselling Service and Doctors Advisory Service	http://www.bma.org.uk/doctors_health/doctorshealth.jsp?page=6
British Association for Psychopharmacology – produced consensus guideline on substance misuse	http://www.bap.org.uk/
British Doctors and Dentists Group - for recovering alcoholic and drug dependent doctors and dentists, and students.	http://www.medicouncilalcol.demon.co.uk/bddg.htm
British Liver Trust resources on liver problems	http://www.britishlivertrust.org.uk/home/the-liver/liver-diseases/alcohol.aspx
British Medical Association - professional association and trade union for doctors in the United Kingdom.	www.bma.org.uk
Cancer Council Australia -position statement summarises the evidence that links alcohol consumption to cancer and explores the impact that alcohol consumption has on overall health and cancer occurrence.	http://www.cancercouncil.com.au/html/prevention /healthyeating/downloads/CCNSW_PositionStatement_alcohol_and_cancer_risks.pdf
Cancer Research UK – *resources on alcohol, smoking and cancer*	http://info.cancerresearchuk.org/healthyliving/alcohol/howdoesalcoholcausecancer/
Doctors Support Network - confidential advice and support to doctors with mental health problems.	www.dsn.org.uk
Down Your Drink - online self-help programme for anyone worried about their drinking	www.downyourdrink.org.uk
Drinkaware Trust- UK-wide organisation that aims to improve our drinking behaviour and the national drinking culture to help reduce alcohol misuse and reduce alcohol-related harm.	http://www.drinkaware.co.uk/
Drinksafely - health aspects of alcohol and includes the Drinkulator drink calculator, for checking if your drinking puts you at risk.	http://www.drinksafely.info/AboutUs/
Drug and Alcohol Findings- new research and its implications for drug and alcohol interventions	http://findings.org.uk/
Electronic Virtual Patients- a bank of virtual patients including cases on alcohol, drug abuse and smoking.	http://www.virtualpatients.eu/referatory/

European Monitoring Centre for Drugs and Drug Addiction – provides factual, evidence based information on drugs and drug addiction	http://www.emcdda.europa.eu/
Erowid non-judgmental information about psychoactive plants, chemicals, and related issues	http://www.erowid.org/
Exchange Publications- *leaflets and resources on drugs and alcohol*	http://www.exchangesupplies.org/
Frank - free telephone service and website offering information and advice on drugs and drug misuse	www.talktofrank.com
Institute of Alcohol Studies -public policy issues linked to alcohol, by advocating for the use of scientific evidence in policy-making to reduce alcohol-related harm.	http://www.ias.org.uk/index.html
International Doctors for Healthy Drug Policies (IDHDP) *network for doctors to share expertise and good practice in reducing the health, social and economic harms of people who use drugs and influence practice and drug policy.*	http://www.idhdp.com/
Mayo Clinic Drug information on drug addiction, nicotine &alcohol	http://www.mayoclinic.com/health/drug-addiction/DS00183 http://www.mayoclinic.com/health/nicotine-dependence/DS00307 http://www.mayoclinic.com/health/alcoholism/DS00340
Medical Council on Alcohol- a charity concerned with the effects of alcohol on health.	http://www.m-c-a.org.uk/
Medical Defence Union (members only) provides expert help advice on medico-legal and ethical Resources for students	www.the-mdu.com
Medical Protection Society (for MPS members only) medico-legal advice and assistance for health care professionals	www.mps.org.uk
NHS Centre for Smoking Cessation and Training- online training module on giving very brief advice on smoking cessation	http://www.ncsct.co.uk/vba?utm_source=NCSCT+List&utm_campaign=7ffb4352f3-VBA2_13_2012&utm_medium=email
NHS Choices Your Health, Your Choices – information on range of health issues including smoking and alcohol	http://www.nhs.uk/Livewell/alcohol/Pages/Alcoholhome.aspx http://www.nhs.uk/Livewell/alcohol/Pages/Bingedrinking.aspx http://www.nhs.uk/livewell/smoking/Pages/stopsmokingnewhome.aspx
NHS Information Centre authoritative source of health and social care data on range of health issues including data on alcohol drugs and smoking.	http://www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles
National Association for Children of Alcoholics information, advice and support for children affected by parental drinking	http://www.nacoa.org.uk/
National Institute for Drug Abuse -"The Clinical Assessment of Substance Misuse Disorders"	http://webcampus.drexelmed.edu/doccom/user/static/m_30_demo/default_FrameSet.htm

National Institute for Health and Clinical Evidence - clinical guidance on specific disease, condition or clinical area	http://www.nice.org.uk/
National Library of Medicine Medline Plus –information on alcohol, smoking and drug misuse	http://www.nlm.nih.gov/medlineplus/alcohol.html http://www.nlm.nih.gov/medlineplus/drugabuse.html http://www.nlm.nih.gov/medlineplus/smoking.html
National Organisation on Fetal Alcohol Syndrome -information for the general public, press and medical professionals on alcohol and pregnancy	http://www.nofas-uk.org/
National Prescribing Centre – guidance and resources on good practice.	http://www.npc.co.uk/
NetDoctor quality-assessed information on range of medical matters including addiction	http://www.netdoctor.co.uk/health_advice/facts/drugabuse.htm
Psychnet –UK information, articles on mental illness, fact sheets, and research sources.	http://www.psychnet-uk.com/index.html
QUIT- charity whose website advice and support for those wishing to give up smoking.	www.quit.org.uk/
The Recreational Drugs European Network (ReDNet)- information available for young people (16-24) and professionals on the effects of new recreational drugs and the potential health risks associated with their use	https://www.rednetproject.eu/index.php
Royal College of General Practitioners Substance Misuse and Associated Health (SMAH) Guidance for Substance Misuse Management in primary care, guidance on crack cocaine and Hep C	http://www.rcgp.org.uk/substance_misuse/drug_misuse_certificate/guidelines.aspx
Scottish Addiction Studies Library – links to online documents and other addiction databases	http://www.drugslibrary.stir.ac.uk/
Secondhand Smoke- website links to resources on second hand smoking.	http://www.nlm.nih.gov/medlineplus/secondhandsmoke.html
SMOKEFREE resources and information to help people go smokefree.	http://smokefree.nhs.uk/
Sick Doctors Trust - Provision of early intervention and treatment for doctors suffering from addiction to alcohol or other drugs	www.sick-doctors-trust.co.uk
SUBSTANCE MISUSE MANAGEMENT IN GENERAL PRACTICE - Collection of resources and links which may be of interest to those students working in general practice. "Post-It's from Practice are short pieces about various different subjects linked to substance misuse.	http://www.smmgp.org.uk
Treatobacco.net- evidence –based data for the treatment of tobacco dependence.	http://www.treatobacco.net
UK Narcotics Anonymous- community based organisation for recovering addicts.	www.ukna.org

UNIVERSITY OF SOUTHAMPTON Online resource looking at alcohol and addiction – epidemiology; aetiology; clinical presentation; risks; management; prognosis; quiz	https://www.som.soton.ac.uk/learn/mentalhealth/bmyr3yr5/curriculum/alcohol/
Videojug – addiction videos on alcohol, drugs and tobacco	http://www.videojug.com/tag/addiction

ADDICTION JOURNALS - TITLE	**URL**
Addiction	www.addictionjournal.org
Addiction biology	http://www.wiley.com/bw/journal.asp?ref=1355-6215
Addiction research and theory	http://informahealthcare.com/loi/art
Addictive Behaviors	http://www.journals.elsevier.com/addictive-behaviors/#description
Addiction Science & Clinical Practice	http://www.ascpjournal.org/about
Advances in Dual Diagnosis	http://www.pierprofessional.com/addflyer/index.html
Alcohol	http://www.alcoholjournal.org/
Alcohol alerts	http://www.niaaa.nih.gov/Publications/AlcoholAlerts/Pages/default.aspx
Alcohol and alcoholism	http://alcalc.oxfordjournals.org/
Alcoholism: clinical and experimental research	http://www.blackwellpublishing.com/journal.asp?ref=0145-6008
American Journal of Drug and Alcohol Abuse (The)	http://informahealthcare.com/loi/ada
American Journal on Addictions	http://onlinelibrary.wiley.com/journal/10.1111/%28ISSN%291521-0391
Drug and Alcohol Dependence	http://www.elsevier.com/wps/find/journaldescription.cws_home/506052/description
Drug and Alcohol Review	http://onlinelibrary.wiley.com/journal/10.1111/%28ISSN%291465-3362
Drugs: Education, Prevention and Policy	http://informahealthcare.com/loi/dep

European Addiction Research	http://content.karger.com/ProdukteDB/produkte.asp?Aktion=JournalHome&ProduktNr=224233
Journal of Addiction Medicine	http://journals.lww.com/journaladdictionmedicine/pages/default.aspx
Journal of Addictions Nursing	http://informahealthcare.com/jan
Journal of Drug Issues	http://www2.criminology.fsu.edu/~jdi/
Journal of Smoking Cessation	https://www.australianacademicpress.com.au/journals/details/6/Journal_of_Smoking_Cessation
Journal of Studies on Alcohol and Drugs	http://www.jsad.com/
Journal of Substance Abuse Treatment	http://www.elsevier.com/wps/find/journaldescription.cws_home/525475/description
Journal of Substance Use	http://informahealthcare.com/loi/jsu
Nicotine and Tobacco Research	http://ntr.oxfordjournals.org/
Substance Abuse	http://www.tandfonline.com/action/aboutThisJournal?journalCode=wsub20
Substance Abuse Treatment, Prevention and Policy	http://www.substanceabusepolicy.com/
Substance Use and Misuse	http://informahealthcare.com/sum
Tobacco Control	http://tobaccocontrol.bmj.com/
General Medical Journals	
British Medical Journal	http://group.bmj.com/products/bmj
Lancet	http://www.thelancet.com/

Glossary of Terms

Academic Champion – A leader identified by individual institutions to champion the teaching and curriculum development of substance misuse in the undergraduate medical curriculum (either clinically or academically based).

Assessment:

Formative - "Formative assessment has a developmental purpose and is designed to help learners learn more effectively by giving them feedback on their performance and on how it can be improved and/or maintained. Reflective practice by students sometimes contributes to formative assessment" (The UK Quality Assurance Agency for Higher Education (QAA),2006 http://www.qualityresearchinternational.com/glossary/formativeassessment.htm (Accessed 30 Nov 2011)

Summative – "Assessed work which contributes to the final outcome of a student's degree, such as unseen examinations, essays, dissertations or presentations". "Summative assessment is used to indicate the extent of a learner's success in meeting the assessment criteria used to gauge the intended learning outcomes of a module or programme." http://www.qualityresearchinternational.com/glossary/summativeassessment.htm (Accessed 30 Nov 2011)

Progress testing –"Progress testing is a form of longitudinal examination that in principle tests trainees at regular intervals and enables them and their course supervisors to monitor their progress over the course of a training programme"
http://careers.bmj.com/careers/advice/view-article.html?id=20001185 (Accessed 30Nov 2011)

Standards setting

The Angoff method - a group of subject matter experts, are asked to evaluate each item and estimate the proportion of minimally competent examinees that would correctly answer the item. The ratings are averaged across raters for each item and then summed to obtain a panel-recommended raw cut-score. This cut-score then represents the score which the panel estimates a minimally competent candidate would get. [43]

The Contrasting Groups method - draw a random sample of examinees. The examiners then consider the responses of the first examinee to all of the questions on the test. As a group they make a decision (consensus or majority) about whether the performance is of a pass or fail level. This process is then repeated for all of the examinees in the sample. After the judgements are made, the scores of the passers and failers are graphed and the cutting score calculated in any of a number of ways. [43]

Hofstee method - This method produces a compromise between relative and absolute standards. As is consistent with absolute standards, the judges are asked to specify the minimum and maximum acceptable cutpoints and, as is consistent with relative standards, they are also asked to indicate the minimum and maximum acceptable fail rates. [43]

Case based learning – "Using a case-based approach engages students in discussion of specific situations, typically real-world examples. This method is learner-centered, and involves intense interaction between the participants. Case-based learning focuses on the building of knowledge and the group works together to examine the case. The instructor's role is that of a facilitator and the students collaboratively address problems from a perspective that requires analysis. Much of case-based learning involves learners striving to resolve questions that have no single right answer."
http://www.queensu.ca/ctl/goodpractice/case/index.htm

Curriculum coordinator – The appointed person to complete curriculum mapping and implement curriculum changes in line with the project mapping matrix and toolkit. Curriculum coordinators worked in collaboration and took advice from Academic Champions within each institution involved in the national project.

Horizontal themes & Vertical themes – "Horizontal and vertical organization are two necessary dimensions of any curriculum design. Vertical organization (sequence, continuity) deals with the longitudinal arrangement of the design components. Horizontal organization (scope, integration) deals with the side-by-side arrangement of the components in the curriculum". Horizontal themes are threads that are repeated in carious courses/modules or units across the undergraduate degree. http://www.ils.unc.edu/daniel/242/CurrNotes.html (Accessed 30 Nov 2011)

Interdisciplinary- refers to new knowledge extensions that exist between or beyond existing academic disciplines or professions. The new knowledge may be claimed by members of none, one, both, or an emerging new academic discipline or profession**.** http://en.wikipedia.org/wiki/Disciplinary (Accessed 30 Nov 2011)

Integrated curriculum- subjects are taught through range of themes and disciplines, as opposed to studying subjects in isolation.

Learning outcome - A learning outcome is a written statement of what the successful student/learner is expected to be able to do at the end of the module/course unit, or qualification. Adam, S.,(2004), Using Learning Outcomes, Report for United Kingdom Bologna Seminar 1-2 July 2004, Heriot-Watt University (Edinburgh Conference Centre) Edinburgh. Scotland. www.scotland.gov.uk/Resource/Doc/25725/0028779.pdf (Accessed 30 Nov 2011)

Multidisciplinary- refers to knowledge associated with more than one existing academic discipline or profession. http://en.wikipedia.org/wiki/Disciplinary (Accessed 30 Nov 2011)

Problem based learning - An instruction strategy in which groups of students are presented with clinical problems without prior study or lectures. (*see also case-based learning)*http://medical-dictionary.thefreedictionary.com/problem-based+learning (Accessed 30 Nov 2011)

Student Selected Components or Special Study Modules - are optional elements within the undergraduate medical syllabus and offer students the opportunity to focus on particular areas of interest in more depth.

Spiral curriculum - "curriculum in which students repeat the study of a subject at different grade levels, each time at a higher level of difficulty and in greater depth" http://www.education.com/definition/spiral-curriculum/ (Accessed 30 Nov 2011)

Substance Misuse - Intoxication by – or regular excessive consumption of and/or dependence on psychoactive substances, leading to social, psychological, physical or legal problems. It includes problematic use of both legal and illegal drugs (including alcohol when used in combination with other substances) http://guidance.nice.org.uk/PH4/Guidance/pdf/English (Accessed 30 Nov 2011)

Trans-disciplinary learning - is the exploration of a relevant issue or problem that integrates the perspectives of multiple disciplines in order to connect new knowledge and deeper understanding to real life experiences. http://transdisciplinary.greenwich.wikispaces.net/ (Accessed 30 Nov 2011)

Virtual Learning Environments (VLEs) – "A virtual learning environment (VLE) is a set of teaching and learning tools designed to enhance a student's learning experience by including computers and the Internet in the learning process. The principal components of a VLE package include curriculum mapping (breaking curriculum into sections that can be assigned and assessed), student tracking, online support for both teacher and student, electronic communication (e-mail, threaded discussions, chat, Web publishing), and Internet links to outside curriculum resources. In general, VLE users are assigned either a teacher ID or a student ID. The teacher sees what a student sees, but the teacher has additional user rights to create or modify curriculum content and track student performance. There are a number of commercial VLE software packages available, including Blackboard, WebCT, Lotus LearningSpace, and COSE. The terms virtual learning environment (VLE) and managed learning environment (MLE) are often interchanged." http://whatis.techtarget.com/definition/0,,sid9_gci866691,00.html (Accessed 30 Nov 2011)

The International Centre for Drug Policy (ICDP), formerly known as the Centre for Addiction Studies, has a national and international reputation for its activities. It is based at St. George's, University of London.

The Centre's Director is Professor Hamid Ghodse, who is a world leader in international drug policy and addictions and is a member (Immediate past President) of the International Narcotics Control Board.

Launched in November 2004, the Centre works with international organisations including the World Health Organisation, the European Union and the United Nations Drug Control Programme to advise, develop and deliver high quality multi-professional education programmes in the prevention and management of tobacco, alcohol and drug misuse.

The ICDP promotes excellence in the field of substance misuse particularly within the international arena, in supporting the development of effective drug policy and initiatives in the areas of treatment and prevention, education and training, research and development. It provides a number of activities, both national and international, relating to treatment and prevention of tobacco, alcohol and drugs, including:-

- *education and training*
- *research and development*
- *policy development*
- *consultancy and advice*

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http://www.sgul.ac.uk/research/projects/icdp